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VOLUME XVIII. ST. LOUIS, MO., SEPTEMBER, 1904. NUMBER 2

INTESTINAL OBSTRUCTION AND COMPLICATING APPENDICITIS: MYOMECTOMY: TUBAL PREGNANCY DIAGNOSED PREVIOUS TO RUPTURE: OVARIAN ABSCESS, REMOVAL WITHOUT RUPTURE OF SAC: OVARIAN CYSTOMA, UNILOCULAR, WEIGHT 72 POUNDS.

By Edward N. Liell, M. D., Jacksonville, Fla.

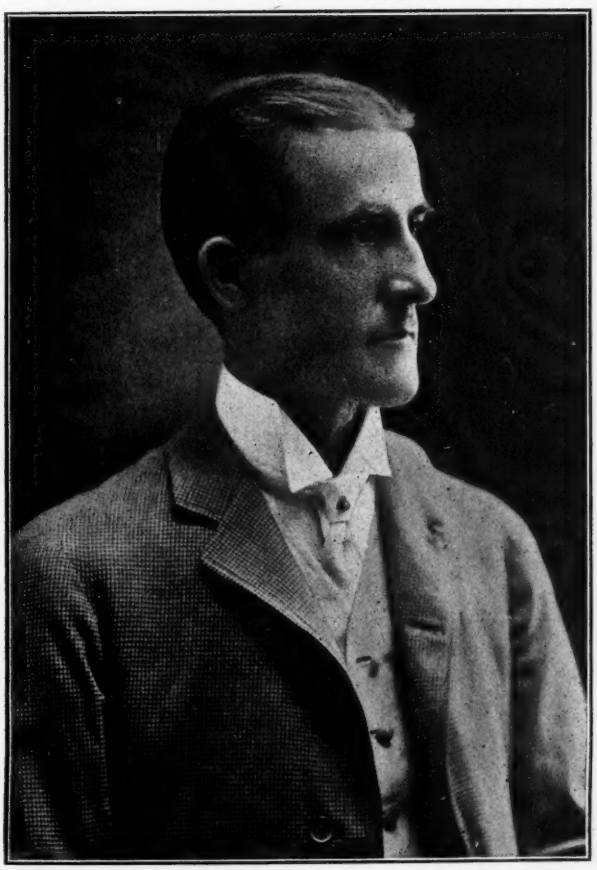
Formerly Lecturer on Gynecology, New York Polyclinic. President of Florida State Medical Association.

The axiom of Lawson Tait, "When in doubt make an exploratory incision," proved the search-light in abdominal surgery. The fascination of the latter, the brilliant results achieved and its increasing scope, tends to stimulate attention to its importance.

The following cases present features of interest, demonstrating the value of surgical interference:

INTESTINAL OBSTRUCTION, WITH APPENDICITIS.

Case I.—This was intestinal obstruction by fibrous band with appendicitis complicating. Patient was aged 33, single.



Dr. Edward Nicholas Liell, Jacksonville, Florida. President of Florida State Medical Association; Vice-President Duval County (Jacksonville) Medical Society; Member Medical Society, County of New York; Formerly Lecturer on Gynecology in the New York Polyclinic Medical School, and Surgeon to St. Elizabeth Hospital, New York City; distinguisht honor of having been a pupil of Dr. Marion Sims. Born in New York City. Graduate of Bellevue, 1884.

Eight years previously she had been operated upon in Philadelphia for ovarian trouble, both ovaries and tubes being removed. Three years subsequently she began to complain of a sense of discomfort and dull, aching pain in the right iliac region, which gradually increast in intensity. In consultation with a physician from another city, I made a diagnosis of intestinal obstruction, with probable involvement of the appendix. Immediate operation was advised and accepted. A loop of ileum, within a foot of the ileo-cecal junction, was found strangulated and partly cyanosed by a fibrous band one inch in length and the diameter of a goose quill, running from the stump of the broad ligament to the middle portion of an elongated appendix, the latter being very much injected and inflamed. The fibrous band was ligated with catgut at the old stump, and the appendix, including the band, removed entire. The patient was entirely relieved of all symptoms and made a full recovery.

MYOMECTOMY.

Case II.—This was a myomectomy for fibroid the size of a lemon in the posterior wall of the uterus. Patient aged 32, married, sterile; gave a history of severe backache, a sense of weight in the pelvis and a frequent desire to urinate; menstruation regular, however. Examination revealed the uterus retroflext and enlarged to the size of an orange, the posterior portion being especially developt. A diagnosis of fibroid enlargement was made and operation advised.

Abdominal section showed a fibroma the size of a lemon, subperitoneal, having a broad base in the posterior wall of the uterus. Here was a typical case for myomectomy, of which I took advantage. A free incision was made in the posterior wall thru the peritoneum and capsule of the fibroid, and the latter enucleated or rather shelled out; hemorrhage was controlled by means of a rubber ligature placed around the cervix. A portion of the excess of peritoneal tissue was excised in order that the line of suture, which included a portion of uterine tissue, would coapt the peritoneal edges more closely; medium-sized catgut was the suture material used. Patient made an uneventful recovery.

Myomectomy or fibroid enucleation, whenever possible, should take the place of amputation or total extirpation of the uterus. It is, in my opinion, the operation of election in all single and multiple subserous tumors with well defined borders.

ECTOPIC GESTATION.

Case III.—Tubal pregnancy; diagnosis one week previous to rupture; verified by operation; recovery. Mrs. M., aged 34, married, two children. Consulted me because of having misst two menstrual periods; regular previously. Upon examination, the uterus was anteverted and slightly enlarged; about the left tube there was detected an enlargement the size of a lemon, which I diagnosed as probable tubal pregnancy, and the patient was so informed. She was requested to call upon me again immediately following the time of her next period. One week following above examination, however, she was taken suddenly with an acute and excruciating pain in the left ovarian region and fainted away. An examination at this time verified my previous diagnosis, with the addition of rupture and hemorrhage. Immediate operation, tho strongly advised, was refused. Three weeks later tenderness had subsided sufficiently to map out an adherent tumorous mass, posterior to the left of the uterus. Operation was again advised, to which she consented.

Upon opening the abdomen there was found an enlarged left tube, slightly cystic ovary and a mass of dark, clotted blood and lymph, filling the pelvic space behind, and especially to the left of the uterus. The anteversion was here noted as artificial, the result of ventral fixation performed three years previously for complete retroversion and prolapse. After breaking up adhesions and the removal of the blood clots, it was seen that the pregnancy and distension occurred in the distal portion of the tube, the latter being an unusually large one. Convalescence rapidly followed its removal with the ovary, the right not being interfered with.

The question of recognition and diagnosis previous to rupture, when the opportunity for investigation presents itself, is a

leading one and is practicable in a majority of cases. There are a number of instances recorded of recurring tubal pregnancy, and while such may be lookt for in a considerable proportion of pregnancies that occur subsequent to a tubal gestation, I do not believe we are justified in removing the remaining and apparently normal tube and ovary at the primary operation.

OVARIAN ABSCESS.

Case IV.—This was a typical ovarian abscess the size of a large orange; removal accomplisht without rupture.

Mrs. X., aged 27; history of mild pelvic trouble previous to pregnancy, puerperal fever following birth of child, still-born, one year ago. Since then she has complained of aching pain, at times sharp in character, tho not obliged to take to bed. When referred to me several months ago I detected, upon examination, in the left ovarian region, a growth the size of a small grapefruit, very tender to the touch; no fluctuation could be felt because of dense adhesions and fixation. A diagnosis of probable ovarian abscess was made and the patient operated upon three days subsequently, the diagnosis being verified. There was no evidence of pus in the tube, the tissue between the latter and the ovary being entirely intact, the tube being interstitially hypertrophied, broad and adherent. Because of the numerous and dense adhesions to other pelvic structures, the removal of this combined mass, without rupture, was by no means an easy matter. The patient made an uneventful recovery.

OVARIOTOMY.

Case V.—This case was an ovarian cyst, unilocular, weighing 72 pounds, removed successfully. Patient, aged 27 years, married seven years, sterile. About the time of her marriage she noticed a slight enlargement on the left side of the abdomen which increast steadily in size. At the time she consulted me two years ago, her abdomen was enormously distended, she having considerable difficulty in breathing, and being obliged to sleep in a semi-reclining position because of abnormal pressure. Examination revealed the uterus but slightly enlarged and anteverted. A diagnosis of ovarian cyst was made and operation advised, to which she subsequently consented. Upon abdominal section an enormous unilocular cyst of the left ovary was removed, the contents of a turbid, syrupy consistency, containing also numerous varied-sized fat globules measuring 6¾ gallons and weighing, with the removed sac, 72 pounds. The shock to the patient in the removal of such an enormous tumor was much less than I anticipated, tho this may be accounted for in great part by the fact that I evacuated the contents gradually. The adhesions were profuse, numerous bands necessitating ligation with catgut; the pedicle of the tumor was four inches broad, enucleation of which being by what I term an Odd Fellows' signia chain-ligature of heavy twisted silk, followed by a re-enforced double-loop ligature. As the adipose tissue of the abdomen was one and one-quarter inches in thickness, the patient having weighed 227 pounds previous to operation, I concluded to suture the peritoneum separately with catgut, using the interrupted Lembert suture. The fascia and muscle were then brought in apposition with heavy catgut, and the remaining wound left to close by granulation tissue, with dressings of 5 per cent iodoform gauze. The right ovary and tube, apparently normal, were not removed.

CURIOSITIES OF SURGERY—SUPERNUMERARY SPLEENS.

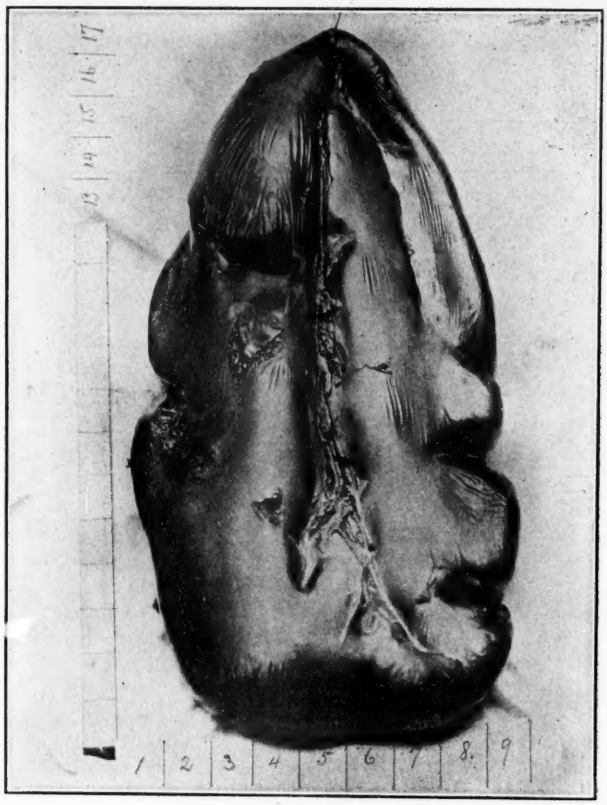
By Emory Lanphear, M. D., Ph. D., St. Louis, Mo.

Chief Surgeon of the Woman's Hospital Association of the State of Missouri; Consulting Surgeon to St. Anthony's Hospital.

In making a splenectomy at St. Anthony's Hospital, Effingham, Ill., upon Lena A—, a German girl aged 18 years, patient of Dr. J. N. Groves the following interesting condition was found.

The spleen was enormously enlarged. After the blood had run out and the organ had lain twenty-four hours in preservative fluid it measured 17½ inches in length by 9 inches in width, and of about 7 inches thickness. The two largest measurements are shown in the photograph, a foot-rule being beside the spleen and remainder of distance markt on paper.

After removal of the spleen it was found that **there were two supernumerary spleens!** One was about one-half the size of the normal spleen, had its own pedicle of two layers of peritoneum with separate branches of the splenic artery, and was situated behind and below the enormous mass. It was left for future usefulness.



Enormously Enlarged Spleen.

The third spleen was situated between the folds of the great omentum, was not quite as large as its fellow—about two

Supernumerary Spleen.

inches in diameter, as shown in the photograph. As compared with the tremendous splenic mass first removed, it was very small, but viewed by itself was truly interesting. Tho it was not doing any harm it was removed in order to positively prove the extra-splenic bodies to be truly splenic tissue. Microscopic section shows the mass to be a supernumerary spleen. It derived its blood supply from a very large branch of the gastro-epiploica-sinistra.

OPERATION FOR CLEFT PALATE AND HARE-LIP.

By W. A. Bryan, A. M., M. D., Nashville, Tenn.

Professor of Surgery, Medical Department, and Professor of Oral Surgery, Dental Department of Vanderbilt University; Surgeon to St. Thomas Hospital.

In operations of so complicated a nature as this, I have thought it wise to take up a single case and detail the steps as they are actually followed in the operating room, illustrating the same by semidiagrammatic drawings.

Miss L. W., came to me November 10, 1903 with a double cleft palate and hare-lip, having markt protrusion of the os incisivum, as shown by photograph in Fig. 1. She was nineteen

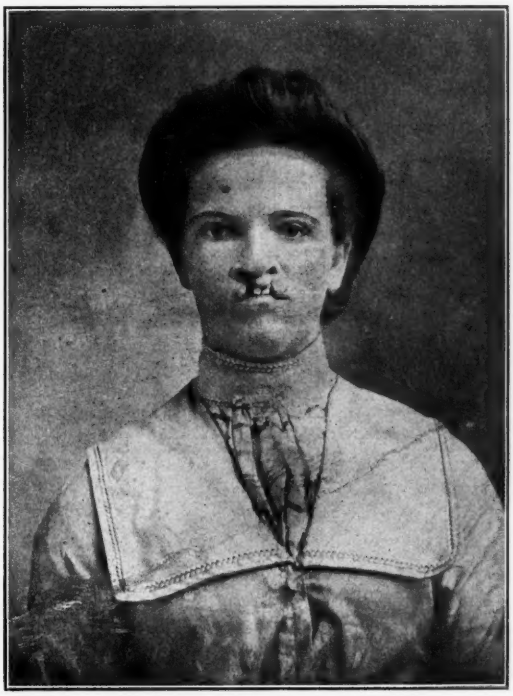


FIG. 1.—As she came to me. Vide Case Record No. 1. Case No. 60.

years old and in fine physical condition. Her enunciation was very poor; one not accustomed to her could scarcely understand a word she said.

This young woman was sent to St. Thomas Hospital on November 11, 1903, and prepared for operation next day. There was nothing unusual in the preparation, she having purgation and abstinence from food on the day of operation; her mouth

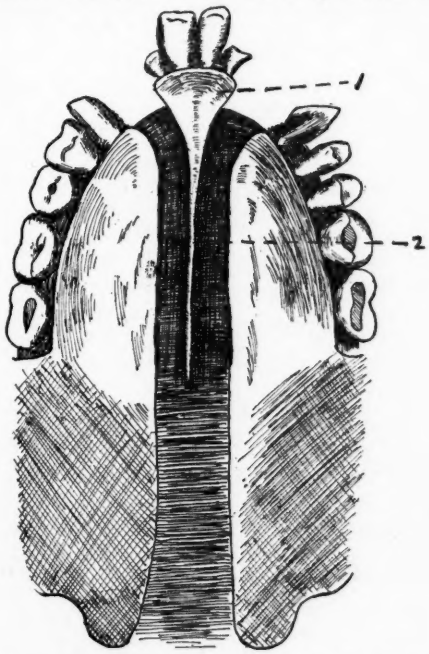


FIG. 2.—Diagram showing deformity as seen from below. 1. Protruding os incisivum. 2. Lower border of nasal septum.

was prepared by washing every three hours with mild antiseptics, and she was allowed to have only sterilized food and drink during her preparation.

One assistant gave the anesthetic, one aided directly in the operation, one handed instruments, and a nurse was detailed to give her whole attention to keeping blood sponged out of the naso-pharynx with gauze sponges on stick sponge-holders, while another washt the sponges for her. Without abundant and skilled assistance, one cannot hope to do this operation with much probability of accomplishing his aim, either immediately or remotely.

Ether was administered with difficulty, owing to the abundant secretion of mucus in the mouth and throat, and to the large amount of ether required for her and the readiness with which she came from under its effect on removal of the cone. To these add the disadvantage of constant, profuse hemorrhage and inability to work and administer the anesthetic at the same time, and one has the most important difficulties in cleft palate work. In this case we were scarcely able to work until morphine (⅜ grain) and atropine (.01 grain) were administered hypodermically, to increase the effect of the anesthetic, prolong intervals between administration and diminish the amount of mucus secreted to a tolerable extent.

The patient was placed on her back, with head extended over the end of the table, the operator sitting on a stool of convenient height, and light coming from above.

The first step after washing the mouth was to incise the mucous membrane and periosteum of the lower border of the nasal septum for three-fourths of an inch just behind the protruding os incisivum, dissect the soft tissues loose from either side of the bone with a periosteal elevator and remove an inverted V-shaped piece from the septum, so as to reduce the os incisivum to contact with the superior maxilla at the borders of the cleft by fracturing the small neck of bone left after removing the wedge. See Figs. 3 and 5.

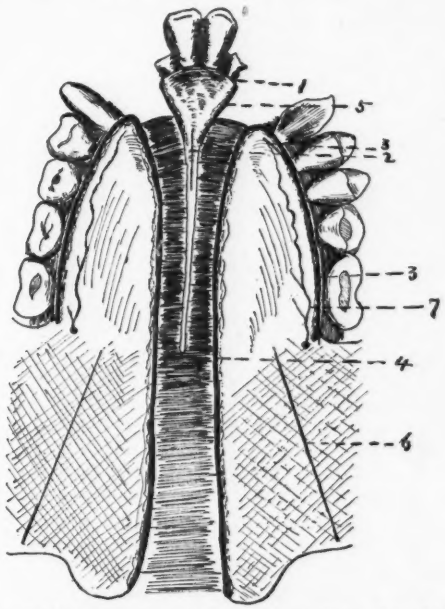


FIG. 3. 1—Os incisivum; 2—incision for removing v-shaped bone; 3—incision in hard palate; 4—pared edge of cleft; 5—pared edge of os incisivum; 6—incision in soft palate; 7—descending palatine artery.

Having removed a sufficient amount of bone from the septum to allow the os incisivum to be reduced to its position in the alveolar arch, the edges of the cleft were pared thruout their extent. (Fig. 3.) This may be done either with scalpel, preferably, or with scissors. Sufficient tissue must be removed to produce an even, raw surface, the thickness of the muco-periosteum at the front, and of the soft palate behind for perfect apposition of denuded surfaces, since better union occurs when this has been done. Still, too wide a strip of tissue cut away narrows the flaps on either side and increases tension on the sutures, a most certain assurance of failure to get union. Now an incision is made along the outer border of the hard palate down to the bone, extending from the posterior limit of the hard palate be-

hind to a point from one-fourth to three-eighths of an inch from the edge of the cleft in front. (3, Fig. 3.) This incision must lie between the free margin of the gums and the descending palatine artery, and especial care must be taken to avoid cutting the latter, inasmuch as the main blood-supply of the flap comes thru this vessel. With an angular dry dissector, the muco-periosteum is dissected free from the under surface of the hard palate, and the firm fibrous attachment of the soft palate to the posterior extremity of the hard torn or cut loose, even if it has to be done by a transverse incision of the nasal mucous membrane at this point. The greatest tension encountered at any point is here; hence, tearing of sutures and failure of union occur more frequently here than any where else.

Soft palate operations miscarry chiefly because of tension due to contraction of the tensor palati and levator palati muscles. (See Fig. 4.) The next step, therefore, should be to re-

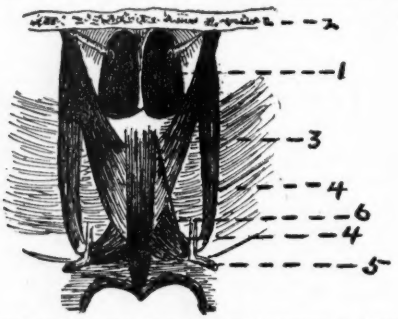


FIG. 4.—(This is according to Treves, Surg. Applied Anatomy.) 1—Posterior nares; 2—base of skull; 3—levator palati muscle; 4—tensor palati muscle; 5—hamular process; 6—line of incision by relief of tension.

lease this tension, which was done in this instance by doing Pollock's operation, viz., to incise the soft palate on either side of the cleft from the mid-point of the posterior border of the hard palate obliquely backwards and outwards until the above-named muscles are cut, i. e., to a point just a little behind the hamular process—when approximation free of harmful muscular tension can be made.

Another method that I have used sometimes is Brophy's relaxation sutures and leadplates. The objection, however, urged against incision of the muscles, to-wit, that the cut muscles

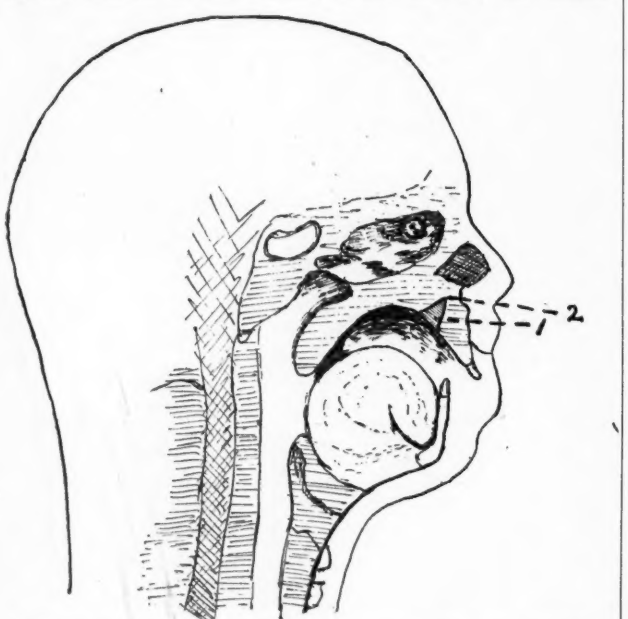


FIG. 5. 1—V-shaped bone removed; 2—line of fracture made by reducing os incisivum.

produce a permanent relaxation and drooping of the soft palate, I have not found to obtain in any of my cases. The chief advantage of the relaxation-suture consists in the fact that less traumatism is done and no raw surfaces are left for infection, as by the incision method. The slightly longer time required for application of the plates is usually no valid objection to them.

Having thus pared the edges of the cleft, including the lat-

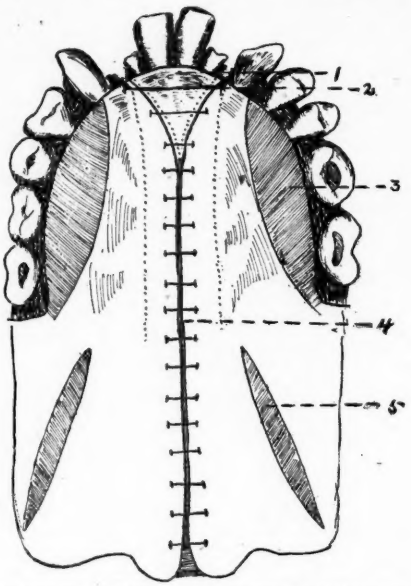


FIG. 6. 1—Os incisivum reduced; 2—large suture holding same in position; 3—exposed bone; 4—line of sutures; 5—gap made by incising soft palate.

eral borders of the os incisivum, and cut and dissected loose the flaps, we begin our sutures at the uvula. They should be of silver wire, silk or silkworm-gut. In the first and last named are to be found the best material, and they should not be tied or twisted, but shotted, since by this method a more accurate appo-

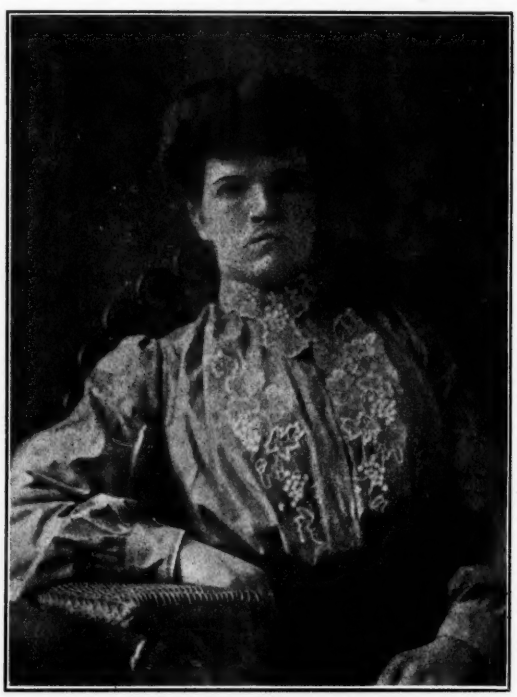


FIG. 7. Result of operation.

sition can be made. We now bring the os incisivum into place and hold by silver wire passt thru perforations made in the bone by a bone drill. This may be done by taking a suture or two

at either side, or, more easily and more perfectly, by passing the suture thru the border of each superior maxilla and completely around the os incisivum. (2, Fig. 6.) Next suture the mucous membrane of the under surface of the os incisivum to that of the hard palate and the work is complete. Sutures are to be removed in from seven to ten days.

I shall not enter here the discussion of cheilorrhaphy, except to say that Koenig's operation was done on the patient under consideration, and altho the cleft was wide, sufficient relaxation was secured by ample dissection of the lip from the facial skeleton. It should here be emphasized that, whatever amount of dissection it may require, enough must always be done to allow easy approximation of parts.

This young woman obtained excellent closure of her palate. The result of the closure of the lip can be seen in Fig. 7, and her articulation improved until she could readily be understood.

CONCLUSIONS.

1. In most clefts of the lip and palate, there is sufficient tissue to allow of closure if the operation is properly done.
2. The rules of asepsis must be carried out here as accurately as possible.
3. Reduce the amount of mouth and throat secretions, and increase the duration of anesthesia between administrations as much as is safe.
4. Get patient in such position as at once to have the best light and the least accumulation of blood in the throat.
5. Do not undertake this operation without ample skilled assistance.
6. Make incisions in such an order as to give the least total amount of hemorrhage.
7. Guard against destroying the blood supply of the flap by destruction of the descending palatine artery.
8. If all tension is not removed at time of operation, there is no hope for complete recovery. This is true likewise of the hare-lip operation.

INTESTINAL PERFORATION IN TYPHOID FEVER.

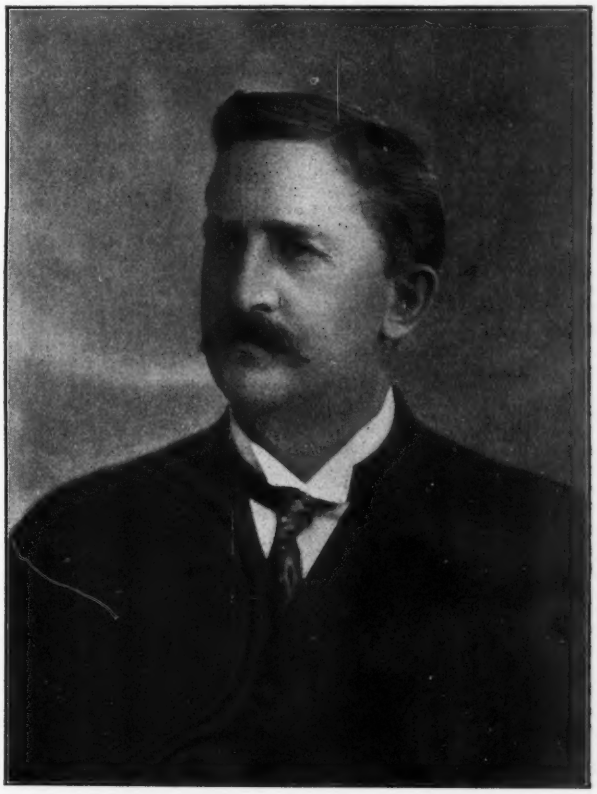
By Hugh M. Taylor, M. D., Richmond, Va.
Professor of Practice of Surgery and Clinical Surgery, University College of Medicine.

The general practitioner and the surgeon are alike deeply interested in the subject of typhoid perforation.

While varying estimates as to the frequency of typhoid perforations have been made, it is known to be sufficiently common in its occurrence to impress its importance, and notably so to the general practitioner, as upon him at first rests the responsibility of making the diagnosis. The surgeon is commonly not introduced to the case until pronounced symptoms of acute intra-peritoneal infection are manifested. The key to success in this, as in other acute intra-peritoneal infections is an early recognition and surgical intervention. The mission of surgery is to prevent widespread infection, to close the perforation before there has been much escape of the ever fluid fecal contents of the small bowel. This is so well known that it need hardly be impresst. Dr. Byron B. Davis puts it: "The whole trend of modern surgery in other lesions is to put out the incipient blaze before the general conflagration has begun." He quotes such men as Cushing to the effect "when reasonably in doubt, explore." Osler, in doubtful cases, believes in "giving the patient the benefit of the doubt and operating." Richardson: "Operation should be done when perforation is suspected rather than demonstrated." Few practitioners who have seen the gross morbid changes incident to delayed intervention will fail to appreciate the difference between an early and a late operation. An early operation implies an early diagnosis. In some instances the diagnosis may be easily made from the symptoms manifested. It is equally true that it is often difficult, if not impossible. Practitioners who are looking for the symptoms of perforation, will most frequently appreciate its occurrence. I have made a reasonably positive diagnosis of perforation before seeing the patient. I have, on the other hand, hesitatingly opened the abdomen and have experienced intense relief on finding the perforation. Far better diagnosticians than myself have opened the abdomen and found no perforation. I would rather open many unnecessarily than wait once too long.

Some years ago I attended a young man with atypical typhoid fever for several weeks. His mind was clear, there had been little or no abdominal distension or pain, his fever was subsiding, if not entirely gone, and I considered him convalescent. I was notified that my patient had just had a severe chill, was suffering violent abdominal pain, and was cold and sweating. I was not surprised on reaching him to find a rigid abdomen, an anxious expression, a rapid, feeble pulse and low temperature. A section was immediately advised, but it was not sanctioned until the end of the third day. A "forlorn hope" operation disclosed a great rent in the ileum and the pelvis full of intestinal debris. With such a history and clinical picture, the diagnosis was easily made.

Contrast this with two cases which came indirectly under my notice several years ago. A colleague, as he entered the Virginia Hospital with me, said: "I have a bad case of typhoid fever in here. If there is perforation, do you wish to operate?" I saw the patient with him. At that time the mental stupor of the patient was too profound to give intelligent expression as to occurrence, location, etc., of pain should it occur. A distended abdomen, a high pyrexia and gastro-intestinal disorder were conspicuously present. Some days later, one of the in-



DR. HUGH M. TAYLOR, of Richmond, Va.

ternes said "that patient that you saw died last night. I made an incision into the abdomen and a great quantity of thick, pea-soup-like fluid poured out. I closed up the incision without finding the perforation." It goes without saying that "pea-soup-fluid" was small bowel contents. A few weeks later a second typhoid case under the care of this same practitioner, with many of the same acute fever symptoms, died. A properly made post-mortem disclosed one perforation and several ulcers with only the peritoneal coat intact. In these instances we have a clever practitioner watching for the symptoms of typhoid perforation and failing to recognize them because the typical symptoms of typhoid fever so effectively maskt those incident to perforation. In looking back over my experience, I can now recall cases with classic symptoms of perforation which I did not diagnose as such, and I have no doubt this is common experience.

A case occurring in my practice was easily diagnosed, was operated on and saved, and, as it was about the thirteenth on record, it was a matter of no small encouragement to me. A child, convalescent from an atypical attack of enteric fever of three or four weeks' duration was taken with acute abdominal pain, and hour by hour presented increasing symptoms of acute

intra-peritoneal infection. There were no perforative symptoms in the case and no post-perforative shock. The case had been mild thruout, and the general condition of the child had not suffered much from the attack of fever. In a few hours, the evidences of perforation were clearly linkt into a chain of evidence as is found in most acute intra-peritoneal infections.

Other cases with equally atypical symptoms have been met. That prompt diagnosis of typhoid perforation is becoming more common as the study of this subject becomes more general is being evinced by the increasing number of cases being operated upon, and the improvement in the mortality, it is fair to suppose, is the outcome to a greater extent to an early diagnosis and resort to preventive surgery rather than to an improved operative technic.

Only about six or seven years ago I read a paper on this subject before the New Orleans meeting of the Southern Surgical and Gynecological Association. The president invoked a discussion, and, without an exception, those called upon said they had had no personal experience in this field of surgery. Yet the literature on this subject today forms by no means an insignificant part of the surgical literature of the day.

A matter of no little pride to myself and my college colleagues is the fact that three of our recent graduates (Drs. Davis, Arbuckle and Claybrook), have diagnosed and operated successfully for typhoid perforation, and all of my last three cases referred to were diagnosed and referred as typhoid perforations by Drs. Barksdale, McDaniel and Hillsman, young graduates upon whom we have impresst this subject in all of its most interesting phases.

On the other hand, I am constantly told of cases which presented sufficiently clear pictures of perforation, which for various reasons were not given the only chance for life—operative intervention. I sympathize with the general practitioner, who shrinks from the ordeal of saying to a parent: "Your child has perforation and must undergo a serious operation to save its life." Let him for his encouragement recall the words of Greig Smith in advocating an operation: "Let the worst happen that may, the patient can be in no more deplorable condition than before operation was carried out, and I plead for an attempt to reduce a mortality of 100 per cent." We do not deny the possibility of Nature's walling in a perforation, but think it must do so by the occurrence of local peritonitis before perforation, and in this event it is not a true perforation into the peritoneal cavity. In complete perforation, we may expect a mortality of 100 per cent. Operative intervention has saved 41 per cent, and it is claimed that an early operation in a series of such cases should save at least 60 per cent. In the broadest sense, operative intervention is conservative and life-saving.

In several instances, I have been askt to see suspected perforations, but close analysis of existing symptoms and careful watching for added symptoms or an increast significance of those existing warranted the diagnosis of local peritonitis without complete perforation. The unique experience of a patient correctly diagnosing her own case as one of perforation came under my observation. This patient lived next door to a patient upon whom I did a late and forlorn operation for general peritonitis incident to typhoid perforation. Such, however, was her dread of hospitals and operations that she made her husband promise her she should not be operated upon. She knew the inevitable consequence, and died without changing her opinion.

Vastly more important than the technic of the operation is the study of the symptomatology of perforation. The technic of the operation does not in many particulars differ from that called for in the prevention and treatment of intra-peritoneal infection, bile-tract infection, gastric and duodenal ulcer, bullet-wounds of the intestines, etc. Ample clinical experience attests the fact that typhoid patients after or even during the acute stages of fever possess astonishing post-operative resisting and recuperating power. Patients, a few in number, have been saved as late as thirty-six hours after perforation, even when complicated by intestinal hemorrhage. "As long as there is life there is hope."

In all acute intra-peritoneal infections, the key to success depends upon getting into the abdomen early and out of it again as quickly as is consistent with complete work. Our conception of what should be regarded as "complete work" varies very widely. It is sometimes harder to get out of the abdomen at the right time than it is to get in. Good men are not willing in general infection to stop short of evisceration and using gallons of water in flushing. (Price.) Others contend that if we trust more to the resisting powers of the peritoneum after removing the focus of infection and blowing out the infected area, we will get the best results. (Morris.) Still another thinks prolonged irrigation or wiping and prolonged anesthesia shocks to such an extent that the patients do not rally. Dr. Murphy reports six bad cases—one a typhoid perforation—in which he simply removed the focus of infection, instituted drainage and trusted to the untrammelled peritoneum to do the rest. His six cases recovered. Fowler by his technic of small incision, wiping of infected area, then flushing and placing multiple drainage, if needed, but certainly a large drainage-tube in the pelvis thru the abdominal incision or posterior colpotomy and elevation of the head of the bed, saved 62 per cent. It is perfectly feasible in men, as I have demonstrated, to secure dependent drainage by incising the perineum, separating the rectum from the prostate and bladder, and puncturing the recto-vesical pouch. Escher contents himself with simply finding the perforation and suturing the torn segment of bowel into the abdominal incision, and, by this plan are recorded fourteen operations and seven recoveries. It is not an easy matter to say that a patient is not equal to a complete operation. Greig Smith, in connection with this subject, asks the pointed question: "Who can say when a patient is moribund?" But he utters another truism which bears equally upon the question of only doing an enterostomy in bad cases of typhoid perforation. "Better a live patient with a fecal fistula than a dead patient with an air and fluid-tight anastomosis." However gratifying such results are, we may not hope for the best possible outcome in cases of typhoid perforation until we learn to recognize it early and institute intervention to ward off widespread infection.

An atypical case of fever with sudden onset of symptoms pointing to perforation presents a grouping of symptoms of a clinical picture which is easily interpreted. On the other hand, if the case is one in which there have been symptoms of local peritonitis and threatened perforation, it may not be easy to say in the incipiency that perforation has occurred. The late symptoms, i. e., the rigid and distended abdomen, gulping, vomiting, shock of sepsis, etc., may be clearly those of septic peritonitis widespread, but statistics teach the vast difference in results between the twelve-hour and twenty-four-hour operation. The operation, so feared by some, is certainly not to be dreaded as is inactivity in the face of a typhoid perforation.

The case is more difficult, if not impossible, to diagnose if there has been pre-existing distension and pain on pressure, with pre-existing hardness, if not rigidity. A pulse of 120 or more would be very significant when coupled with other symptoms of perforation provided stimulation of the cardiac centers by the typhoid poison had not previously produced a pulse-rate as frequent. A sudden reduction in temperature from 104° to 100° or less would imply shock of perforation or hemorrhage were it not for the fact that just as wide variations in temperature are shown on fever charts, continuing for days and weeks with or without intestinal perforation or hemorrhage.

Abolisht peristalsis and movement of gas have been impresst by Greig Smith and J. B. Murphy as diagnostic in bullet-wounds of the intestines. I have no doubt with the advent of widespread septic peritonitis and intestinal paresis from sepsis, we do have a cessation of gaseous movement in the intestines, but this is a late symptom. In several instances, I have verified the fact that there is no diminisht gaseous movement in the incipiency of typhoid perforation. In one case the perforation occurred while the young man was straining to pass his water. He was a patient in the Virginia Hospital and one of the internes (Dr. McDaniel) recognized it at once, and I saw him in consultation in less than an hour. Gaseous movement was active and continued until a section was made several hours later. There was a large perforation in the lower part of the ileum. I am of the opinion that this symptom is not uniformly an early manifestation and possibly does not occur until the development of septic peritonitis. It has been claimed that an increase of the sounds of the larger abdominal vessels is an evidence of intestinal paresis in perforation from bullet wounds, etc. I have not been able to elicit information by this means, either in bullet or typhoid perforations. Resonance on percussion over the hepatic area is a guide impresst in many text-books. I have been unable in bullet wounds and typhoid perforations to elicit in a single instance information along this line. Perforative abdomial distension may crowd the intestines between the liver and abdominal wall and perihepatitis or other inflammatory conditions may have induced abhesions between the visceral and parietal peritoneum. Progressive anemia suggesting hemorrhage is the only diagnostic value I can see in blood-count, and the facies and thoracic breathing is often markedly influenced by preperforative abdominal distension. Muscular rigidity

is a guide of more value in intra-peritoneal infection than any other with which I am familiar, but rigidity may be a sequence of local peritonitis without perforation. I am of the opinion that local peritonitis often occurs and saves many from perforation.

In considering the subject of shock incident to typhoid perforation, we must distinguish between the primary shock which comes on, when it does occur, immediately after perforation and is due to the trauma and the irritation of the peritoneum, by the effused intestinal contents, and the shock which comes on later, and is the shock of sepsis. In some of the cases which have come under my observation, there was no appreciable early shock and most observers have met with such cases. In other cases, the shock was profound.

In this connection a case operated upon during the past winter for Dr. Blanton Hillsman was interesting. In the third or fourth fever week of a severe case, the young man went immediately into a state of profound collapse on the occurrence of severe abdominal pain, rigidity, etc. The collapse was as profound from the first as when I saw him in consultation several hours later. Dr. Hillsman was with him from the first and gave him the benefit of prompt and intelligent treatment directed to the collapse. Dr. Hillsman recognized at once that perforation had occurred, and from the profound symptoms it was fair to suppose the perforation was large and the quantity of intestinal escape correspondingly large. In spite of best efforts, continued for six or eight hours, no appreciable reaction could be obtained and we agreed that it was better to operate during the shock without sepsis than during sepsis without shock. A section disclosed a great quantity of debris in the abdomen and pelvis, and matted intestines and omentum around an abscess-cavity which had ruptured and emptied itself into the peritoneal cavity. This undoubtedly was one of those cases, rarely seen, in which perperforative peritonitis had walled in the danger point. A subsequent perforation and local abscess with rupture was the sequence. An ugly looking large perforation was conspicuous in a portion of the small bowel entering into the formation of the abscess wall. This case presents striking evidence of what resistance Nature is equal to even in patients depresst by prolonged fever and the waste incident. In one other case, operated upon by me thirty-six hours after a complete perforation, the pelvis was found full of intestinal debris, and yet it was shut off from the general peritoneal cavity by a diaphragm of adherent intestinal coils. Suppurative peritonitis, incident to appendicitis, may present a clinical picture and pathological changes not unlike those incident to typhoid perforation and probably a few of the cases recorded as typhoid perforations were cases of virulent appendicitis or even perforation of the appendix. It would seem that in cases like the one seen with Dr. Hillsman, nothing could be gained by further delay. In no other instance, however, have I seen such profound shock.

A question of much moment with students of this subject is: "Shall we operate during the existence of shock?" The best results, as shown by statistics, have been obtained in cases in which the operation was not undertaken during the continuance of shock.

The matter of using local anesthesia to avoid the shock incident to prolonged general anesthesia finds favor at the hands of good men. In simply doing an enterostomy I am sure local anesthesia may with advantage be substituted. I think I saved a life by an enterostomy in a case of typhoid fever. The operation was performed upon a desperately ill patient. There was enormous abdominal distension and paresis from local peritonitis. The death of the patient seemed only a question of a few hours. An enterostomy was quickly done with great relief of shock, etc., incident to enormous distension.

We cannot in typhoid perforations expect to find pathognomonic symptoms any more so than we can hope to find them in bullet-wounds of the abdomen. In this last, the matter of diagnosis has resolved itself into an exploratory incision, and this certainly in civil practice is sanctioned as conservative treatment. To wait for symptoms is to wait for symptoms of septic peritonitis and too late for preventive surgery. Conservative students of the subject of typhoid perforation advise when there is reasonable suspicion of perforation the patient is entitled to the benefit of an early exploratory incision. In this advice, I emphatically concur, and under no circumstanves do I think we should shrink from the late operation—desperate as it usually is. By grouping symptoms present and past, a diagnosis can often be made and a chain of evidence as closely linkt as we find in many acute intra-peritoneal lesions. It is even more unsurgical to delay in typhoid perforation than in gastric, duodenal, biletract or appendiceal perforations, or in widespread intra-peritoneal infection from bullet perforations. Delayed interference in any of these gives poor results, and it is equally true in typhoid perforation. Instances may occur in which an operation may not be sanctioned or possibly is contraindicated. I can not think of any condition which will warrant us in not operating if there is a complete perforation. If a patient refuses to be operated upon, then the treatment for widespread infection advised by Ochsner should be adopted. I hope I shall never be called upon again to sit by the bedside of a patient so affected, and see him die hour by hour for want of operative intervention.

SECONDARY ABDOMINAL SECTIONS.*

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With all our recent advances in operative technic, we are sometimes compelled to acknowledge our failure to accomplish at the first operation all that was intended at the outset; or Nature may fail to carry out the work designed by the abdominal surgeon, regardless of his care in the details of operation. Therefore, secondary abdominal sections are sometimes imperative. This is not so serious a matter as formerly, because with the elimination of sepsis, improved methods of technic, and more careful after-treatment, the danger has been reduced almost to the limit and convalescence is so unretarded and comfortable as to be a source of wonder.

By the term "secondary abdominal sections" is meant those required some weeks, months or years after the first, for the relief of conditions not cured by the primary operation, or to repair results of that operation or to relieve conditions which have arisen after the first work was completed.

The necessity for a secondary operation, often unavoidable in even the most skilled hands, is to a certain extent a reproach to surgery and an annoyance, often an embarrassment, to the surgeon. This class of operations presents special and exceptional difficulties, and often, after the best efforts of skilled surgeons, terminates in disaster or failure. Secondary sections compose a class quite apart and to themselves in the complications and difficulties presented, and deserve special consideration.

Of great importance is the prevention of those sequelae of operations which necessitate secondary intervention. I shall, therefore, endeavor to emphasize those special improvements in operative methods, and the lessons born of experience, which have done so much to perfect results and diminish the frequency of secondary operations, and which must of necessity constitute the working basis of prevention.

HERNIA.

The most common cause of post-operative ventral hernia is suppuration of the incision after abdominal section. Fifteen years ago it was estimated that quite 10 per cent of cases of abdominal section were within three years followed by hernia at the site of the incision. With more thoro skin disinfection, with improved suture-material for buried sutures, with more painstaking care of the operator's hands when exposed to septic material, with the use of sterilized rubber gloves by assistants and nurses, with more perfect hemostasis, with diminisht insult to the tissues, and with greater care in adjusting sutures, suppuration of the abdominal incision has very greatly diminisht. The perfection of operative technic along these lines must be regarded as the best means of preventing infection of the incised tissues.

The restricted use of drainage, and especially the substitution of the rubber-covered gauze wick for capillary drainage in place of the glass tube, has done much to lessen the frequency of hernia. In no particular feature of the technic of abdominal surgery has so markt and universal change taken place as in the use of drainage. In the early days the drainage-tube played an important and conspicuous part in all classes of abdominal operations. It was used in both clean and septic cases, and while harmful in some ways, it undoubtedly "covered the retreat" after many incomplete and imperfect operations. Advancing knowledge and improved skill have discarded the glass tube and reduced the scope of drainage within certain defined limits. Drainage has an important place still in abdominal and pelvic surgery, but as now applied it is seldom the cause of hernia. In cases of suppurative appendicitis, however, where the open

*Abstract of paper read before the St. Louis Medical Society.

method of treatment is required, with multiple drains, hernia is yet of common occurrence.

The fixation of the pedicle in hystero-myomectomy at the lower angle of the parietal incision with the serre-noeud after the method of Koeberle, which was popularized by Keith and Tait, was followed more frequently by hernia in my work than any other procedure. The improved operation, in which the pedicle is buried beneath the peritoneum and the parietal incision closed as in other sections, has done away with this prolific cause of post-operative hernia.

SECONDARY SUPPURATING FOCI.

Secondary foci of pus are usually the result of incomplete operations in inflammatory conditions where adhesions divide the suppurative area into multiple pockets; or in suppurating cases wherein the drainage tract becomes obstructed by adhesions, leaving infected areas enclosed and without an outlet. Such condition usually requires secondary operation to open up the enclosed abscess cavity and afford free drainage. Such secondary foci formerly occurred frequently after incomplete operations for suppurative salpingitis and peritonitis, but have become less frequent with the improved methods of operation now commonly applied. Such complications are common after vaginal operations for suppurative salpingitis and peritonitis, often requiring secondary operation by abdominal section. Perhaps the most frequent site of multiple suppurative foci is about the caput coli in suppurative appendicitis. For this reason adhesions should be separated in all cases which will allow thoro work, and all suppurative forci opened and drained. Secondary operation should not be delayed if indicated at any time during the post-operative progress of the case.

ADHESIONS.

In the early days, when drainage was almost universal, and extensive lavage with hot water was in daily use, together with elaborate sponging and mopping, adhesions were of more general occurrence and greater in extent than at the present time. Omental adhesions with traction in consequence on the stomach, intestinal adhesions causing pain and obstruction, were more distressing relics of otherwise successful operations. All abdominal surgeons of wide experience can recall the numerous and difficult secondary operations that were required to release the intestines from adhesions that made the patients' lives miserable. While these conditions were caused in great part by septic processes, there can be no doubt that in a large proportion of cases the injury to the epithelium of the peritoneum from excessive washing and mopping was the cause of adhesions. Nothing has done so much to lessen the frequency and extent of post-operative peritoneal adhesions as the modern practice of sequestrating the general peritoneum by broad layers of gauze, and limiting all traumatism of operation and peritoneal toilette to the immediate pathologic area. Another important means of protecting the peritoneum from adhesive inflammation, and to my mind one of the most important additions ever made to the operative technic, is the use of normal saline solution. It is easy for anyone to test for himself the common practice of ophthalmologists in using salt solution to apply to the conjunctiva in order to avoid the pain of plain water at any temperature. Salt solution has a special application to the peritoneum, and one of the most positive is its power to so attenuate septic material as to enable the peritoneum to dispose of it without injury to its own surface. Gauze packing for hemostasis and the Mikulicz method of draining deep peritoneal areas have had much to do with the causation of adhesions. The less they can be employed the better for both patient and surgeon.

VAGINAL OPERATIONS.

Vaginal section instead of the abdominal route has been selected by many operators on account of its freedom from danger and the immediate recovery. Many secondary abdominal sections have been necessary to correct troubles following incomplete work below. Vaginal incision and drainage may be regarded as a most valuable preliminary operation in cases too septic to permit of radical work; but should always be done with the expectation of later completing the work by abdominal section. But this class of secondary sections is among the most difficult work in surgery.

CONSERVATIVE OPERATIONS.

This paper would be incomplete without reference to so-called "conservative" operations upon the uterus and especially the uterine appendages, as furnishing such a large class of cases requiring repeated operations. It is well known that in the early period of modern pelvic surgery ovaries and tubes were needlessly sacrificed in the enthusiasm of a new and brilliant surgical achievement. The reaction which came with this error of judgment was followed by the opposite extreme—the effort to remove only a part of diseased structures with the hope that the **vis medicatrix naturae** would be equal to the repair and restoration of minor pathologic changes. Diseased ovaries were punctured, or cauterized, or resected, and left in situ; infected tubes were loosened from adhesions, washt out with antiseptic solutions, and left in the abdomen with the expectation of restoration to normal structure and function. The application of this so-called principle of conservative surgery has necessitated more secondary operations than any other modern surgical innovation. So conservative and capable a surgeon as Dr. H. C. Coe of New York, in a recent article says, after referring to a previous protest against the extreme application of so-called conservatism in pelvic surgery: "The views then expresst have been amply sustained by my later experience, including about three hundred cases. I do not overstate when I say that in over 5 per cent of these secondary operations—abdominal or vaginal—has been necessary in order to relieve distressing symptoms, or to cure morbid conditions following the former operation. I have no doubt that this percentage would be higher if I could add cases operated upon again by other surgeons." My own experience confirms this statement of Coe. No useful organ or structure should be needlessly sacrificed; but structures infected and damaged beyond repair should be removed.

NEUROTIC CASES.

In this connection it may be well to mention that class of patients familiar to all doing extensive work in abdominal surgery, which may be designated the neurotic class. With persistent pelvic pain and dysmenorrhea they are usually introduced to surgical treatment with cervical dilatation and uterine curetage. Again they seek surgical treatment, and are pleased to have the appendages removed. Later they are apt to have hysterectomy. Always improved for a time by an operation, but never cured, they go their way. To operate in this class of neurotic patients without demonstrable lesions, is a misapplication of surgery and should not be done even for the so-called moral effect, which at best is rarely more than a temporary impression.

HERNIA IN ITS RELATION TO TRAUMA.

By James B. Morgan, M. D., Augusta, Ga.
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In this day when the calendars of our courts are almost blockaded with countless damage suits, the medical expert, much to his regret and annoyance, finds himself in frequent demand to testify as to the medico-legal complications involved. Complex and disjointed hypothetical questions are fired at him, and required to be answered with a simple "yes" or "no."

"Give accurate diagnosis and prognosis of traumatic neuroses," "What will be the immediate and ultimate effects of injuries, objective and subjective?" "Can a strain of the arm or a blow on the back produce inguinal hernia?" These are a few of the many bright interrogations our learned legal brothers delight in propounding to us.

Since hernia is found in about 5 per cent of the entire population, and further, since some surgical text-books and a number of our best surgeons place traumatism as a most important factor in the causation of hernias, it follows as a natural sequence that the relation of hernia to trauma should be an important and rather frequent issue in damage suits, and accident insurance, and its discussion from a scientific standpoint a timely subject in surgery.

We can perhaps simplify the question by confining our consideration of it to that form of hernia known as acquired. I believe it is now almost universally conceded that a congenital hernia, while it may not appear until late in life, is dependent upon conditions which existed at birth. That high authority on hernia, Prof. W. B. Coley, in discussing this subject, says: "The chief exciting cause of hernia is a sudden strain * * * the larger proportion of hernias, especially in adult life, come on soon after some unusual effort."

Professor Da Costa, in his book on Surgery, gives as the exciting cause of hernias: "Muscular effort; such as straining at stool, coughing, lifting weights, jumping, etc."

Prof. William T. Bull, in the International Text-Book of Surgery, writes: "A large proportion of herniae occurring in adult life, may be traced to a sudden and severe strain."

Now, if some "sudden or severe strain" or "lifting heavy weights," or "jumping, etc.," are such important factors in the production of hernia, where none existed before, why is it that all professional strong men, football players, high- and low-jumpers, acrobats, draymen, porters and others who do heavy lifting, and make unusual muscular exertions, are not all ruptured?

But such is not the case, as we all know. While it is true that hernia is to some extent an "occupation disease," since any kind of heavy manual labor predisposes to it, any kind of work requiring constant, strong muscular effort can cause hernia, but out of over three hundred cases which I have examined and sought for the cause, not one was produced by any "severe and sudden strain," not one from "lifting a heavy weight" or "jumping," and only one from injury of any kind, except those I have seen and heard described in suits for damages, where I was surprised to find that "rupture from injury" was rather frequent and common.

In each of the cases I have seen or heard of in the courts, the claimant made solemn oath that some direct or indirect injury, the result of gross negligence upon the part of the defendant, was the immediate and sole cause of the hernia.

In every one of these court cases there have been found reputable and honest physicians to sustain and elucidate the contentions of the claimant. While the records of the courts, and experience of surgeons, show that some unscrupulous persons, in their eagerness to recover from a corporation, the largest possible amount of damages, have not hesitated to call to their aid a pre-existing hernia.

Yet, on the other hand, it would be manifestly unfair and misleading to accuse or suspect every person who claims to have a hernia as the immediate or indirect result of an injury with deliberate fraud, or with an intent to deceive. A person may have, without his knowledge, a pre-existing hernial sac at the time of an injury. In other words, he may have a latent hernia, for an indefinite time and his attention be first called to it by a personal examination, or by his physician's making a diagnosis for him following an injury, and he soon is convinced that the condition is the result of the injury, and of nothing else.

All examiners for life insurance know how many unsuspected hernias are discovered as a result of their examinations. It is by no means a rarity for a patient to come to a surgeon for treatment of a hernia on one side and examination reveals one on the other side. I recall a case in my practice where I was requested by a physician to operate for the radical cure upon a patient whom I had not had an opportunity to examine. When the patient, fully anesthetized, was brought into the operating room the hernia was found to be reduced, and I askt the physician who was present: "On which side is the rupture?" He said he had forgotten and I began to examine to find out, but could not tell from the size and condition of the inguinal rings which side had been involved. I was about to order a postponement of the operation, when the patient began to vomit, and a well defined hernia appeared on both sides. Neither the patient or the physician had ever found, or suspected, a hernia on but one side. Now, if such a person had received a blow from any cause, in or about the inguinal region, he would, of course, from a necessary examination of the part discover the rupture, and while he might have been perfectly honest, it would be no easy task to convince him that the hernia was not the direct, or indirect, result of the injury. If the physician should add his opinion to this conviction of the patient, it would be impossible ever afterwards to persuade him to the contrary; and the average jury, upon such evidence, would most surely award him heavy damages.

I have seen one case only where traumatism could be reasonably inferred as the cause of the rupture. A blacksmith, 56 years of age, while shoeing a young mule, received a severe kick in the right groin directly over the canal. I saw him in about four hours, and found an incomplete, oblique inguinal hernia, which with some little difficulty was reduced. An area about four inches in diameter, with the canal as the center, was ecchymotic, swollen, painful, and imparted to the examining finger a crepitant, spongy sensation. A bandage was applied and the patient advised to remain in bed. Next morning I was called early and found that he had walkt about the room several times, causing rupture to reappear. Taxis carefully employed for five or ten minutes failed to reduce it. Patient was sent to the hospital and an immediate operation performed. Upon incision it was revealed that the intercolumnar fascia and muscular fibres had been ruptured, and a few of the anterior fibres of the internal oblique had been torn from their attachment to Poupart's ligament. After reduction, which was quite easy, a Bassini operation was performed and he was sent home in eighteen days perfectly cured. At time of operation the left inguinal canal was found to be over-patent, giving very full impulse on coughing or straining, but no protrusion had ever been observed on this side. In less than two years a complete hernia developt on the left side. I never saw the patient before injury, and did not know condition of canals prior to that time, but it seems quite probable that an unsuspected latent hernia may have been present at the time of the injury. This opinion is strengthened by the fact that the patient's father, an uncle and a brother had all suffered from inguinal hernias.

Drs. Coley and Satterwhite, in an article in the February number of this year's International Journal of Surgery, cite four cases out of fifty thousand, where it was probable at least, that traumatism was the direct cause of hernia. In all of the cases mentioned the injury was inflicted directly over the canal, and in only one was it certain that at the time of the trauma there was no preformed sac or latent hernia. The exception was one who had undergone the radical operation some three years previously, and repeated examinations had shown the canal to be normal. This patient received a severe kick in the groin and rupture resulted. While this instance seems to establish the contention of those who believe that traumatism is not an infrequent cause of hernia, here, however, we are compelled to distinguish between the inguinal canal in normal condition and one which has been re-formed by an operation for the radical cure.

One of the most complete reviews of the question of traumatic hernia is that of Prof. Thomas H. Manley, publisht in the Journal of the American Medical Association in October, 1892. Having made a most careful investigation of all the literature at his command up to that time, he sums up the result of his studies in these words: "After having examined and operated on nearly every species of hernial disease, I am able to say without any qualification whatever that hernia it is never attributable to traumatism alone, unless the violence be applied by some hard, heavy, sharp-pointed instrument or substance which either punctures or rends the abdominal wall; that when a hernia is already present, violence which might in the sound, whole individual be borne with impunity, may, if accidently applied over viscera which have escaped from the abdominal cavity, cause very painful or mortal consequences. Hence the herniated man is not a whole, perfect being, so that a comparatively trivial force, which in the normally developt would make no impression, might with him be followed by serious results."

In his recent Atlas and Epitome of Abdominal Hernias, Sultan writes: "In the critical examination of a causal relation between hernia and accident we must remember, first of all, that a hernia complete in all its parts, can never arise at the moment of an accident, or by a single augmentation of the intra-abdominal tension, be it ever so great. If the hernia first appears at the time of an accident, we may certainly suppose that the hernial sac was either congenital or gradually formed."

Now if traumatism is a frequent cause we ought to know it, and thus be qualified to emphasize its importance and to appreciate its dangers. On the other hand, if violence plays no part in the causation of hernia, we, as seekers of scientific knowledge, should know the truth, so as to prevent wrongly attributing to some severe or slight injury, what is due entirely to antecedent conditions. My own study of the question leads me to the opinion that traumatism is, occasionally, a true cause of hernia, but only by direct violence. That is, the force producing the hernia must be applied to that part of the abdominal wall at which the hernia appears, and then by some hard instrument with sufficient force to rupture the wall.

Whether the rupture follows the natural openings in the abdomen, or creates a new passageway, is immaterial to our purpose.

Hernia as the result of injury, can and does occur. How frequently I am not prepared to say, but from a careful study of the statistics on the subject, I would suggest that one case in every ten thousand would be a liberal estimate. In a very great majority of all the cases of the so-called traumatic hernias, there was, in my judgment, without doubt, a pre-existent weakness at the hernial opening and a preformed sac, which would in all probability have resulted in a rupture at no distant date if no injury had been received.

It may be said with emphasis and certainty that indirect injury, wherever and however applied, is never the cause of a hernia. No concussive force, however severe, or simple, increase of intra-abdominal pressure, can ever be satisfactorily

demonstrated as the primary and sole factor in the production of any form of abdominal hernia.

If the limits of my paper would permit, I could cite from my practice and the hospital records a number of cases to prove the correctness of this proposition. Indeed, I cannot think it would require any evidence in corroboration, for I feel sure that when anything like a careful examination has been made, the experience and observation of every surgeon in the land will overwhelmingly confirm it. There is no doubt that violence direct, or even indirect, may greatly aggravate an already existing hernia, and in some cases produce strangulation, but this is very far from admitting that ordinary or indirect traumatism can produce hernia under normal conditions. When a hernia appears, after the application of ordinary force, it can always be demonstrated that it had previously existed; the injury being in no sense the cause, but an incident only in its evolution.

Congenital hernia is never the result of traumatism, but of structural defects. In acquired hernias various factors have to be considered. In general terms, without going into particulars, it may be said that any condition which weakens the abdominal wall predisposes to rupture.

Muscular relaxation from ill health or old age; repeated pregnancies; the removal of a large abdominal tumor; abscesses; and wounds of the abdominal wall; the constant lifting of heavy weights; and the diminisht resistance of certain parts of the abdominal wall, all predispose to the development of hernia. In fact, any long-continued force requiring strong muscular effort, as straining at stool from chronic constipation, or from an old urethral stricture, violent efforts in coughing, etc., by prolonged, constantly repeated, increast abdominal pressure, are one and all, true factors in the causation of acquired hernia. Under their influence, the parietal peritoneum yields slowly more and more to the increast intra-abdominal pressure at the weak place in the abdominal wall, and finally a protrusion is formed here, into which the viscera gradually but surely pass.

The supposed sudden appearance of an acquired hernia is in my opinion always dependent upon a mistake in observation. The preformed hernial sac is present but empty, or the hernia so small at the time of the injury as to have escaped previous notice.

CONCLUSIONS.

To sum up, I am satisfied upon the following points:

1. I think it is establisht by experience, and a preponderance of testimony from our best authorities, that indirect violence of any character can never be regarded as the cause of a hernia.
2. Severe direct injury cannot be considered a causative factor, except where the muscular wall of the abdomen is ruptured by the injury and the hernia appears at the point of the injury.
3. It is highly probable, if not absolutely sure, that in all cases of so-called traumatic hernia, where ordinary force only is applied, the true cause will be found in congenital defects, and not as a result of the trauma.

FRACTURES OF LONG BONES.*

By M. E. Nuckols, M. D., Richmond, Va.
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Too little importance is attacht by the average doctor to the treatment of fractures; indeed, the text-books devote scant attention to it. Yet it is one of the most important topics connected with the practice of medicine and surgery.

In the management of fractures, especially of the long bones, one must not only be able to make the diagnosis, determine the exact site of the solution of continuity, the amount of injury to the soft parts (whether simple or compound, etc.), and the proper mode of correction and maintenance thereof, but the existence or non-existence of associated or complicating lesions; a break in an old person who has bronchitis or a man who has kidney lesions or syphilis being quite different from one in a young and healthy subject. Treatment therefore resolves itself into (1) treatment of the fracture, (2) treatment of associated lesions, and (3) treatment of the patient.

The first thing to be considered when one sees a fracture is immediate reduction and the application of a dressing which will fix the parts and prevent further injury to the surrounding tissues and more extensive displacement. All fractures are attended by more or less laceration of periosteum, but there is rarely complete destruction of it at point of injury; a small strip remaining connecting the two fragments called the "periosteal bridge" which is so necessary to the healing of the fracture—consequently every effort should be directed to preserve this by some fixt dressing. In many cases of accident it is not always advisable to do more than to apply a fixation apparatus without any attempt at "reducing" the fracture. The parts may be so much swollen, the surrounding tissues so much contused, and muscular spasm so pronounced as to render a diagnosis of the character and extent of the fracture uncertain, and successful reduction still less probable. Fortunately, this makes no material difference as the work preparatory to union goes on just as well.

In compound fractures the primary treatment is addresst to the wound, only such dressings as necessary to prevent injury to the surrounding tissues being used until external healing is practically complete, the bone simply being placed in as good position as possible and maintained by dressings which do not interfere with proper attention to the wounds. Treatment of the wound will depend on whether the fracture is produced by direct or indirect violence. When produced by direct violence the soft parts are contused and lacerated to such an extent that the vitality of the tissues is very much impaired. These wounds are always infected, and sloughing usually occurs. The wound should be rendered as nearly clean as possible, all fragments of bone being completely detacht and removed and free drainage instituted. Healing takes place by granulation and is usually very slow.

If the fracture is produced by indirect violence, the broken bone being forced thru the skin, or if by a gunshot wound, the treatment is usually much simpler. Often the wound is not seriously infected, and with extraordinary care heals by first intention. Compound fractures produced by modern bullets may be extensively comminuted, and some fragments may require removal.

Occasionally, on account of advanced age or general systemic disease, one may have to give the general condition of the patient first consideration, using all means at command to save life; regarding the outcome of the fracture as of comparatively little moment.

Whenever it is deemed advisable, the fracture should be reduced as soon as possible after the accident. Still there are a few cases in which reduction is inadvisable, as in impacted fracture of the neck of the femur in the aged. In others reduction is impossible, either on account of the interposition of muscle or contraction of muscles attacht to the broken fragment, as the tuberosities of the humerus, trochanters of the femur and olecranon process. Reduction should be accomplisht in these cases by operation after failure by other methods.

In reducing fractures it is necessary to have an accurate knowledge of the muscles in relation to the affected part; to know their attachment, action and power of contraction; and to overcome them by position and mechanical appliances.

In fractures of the shaft of the humerus and femur the proximal fragment is always rotated outward and lifted, hence the distal fragment must be placed in a corresponding position. The muscles attacht to these bones are very powerful and overriding is frequent. To counteract this, extension and sometimes counter-extension is necessary. The amount of weight used in extension will depend on the size and degree of development of the muscles. The appliance used for extension in fractures of the femur will be wholly a matter of individual preference, Buck's extension being the most popular in this country. Hodgen's suspending splint is one of the best. Extension in children is usually made in the vertical position. The limb should always be put up in the position which best relaxes the muscles attacht to the broken fragment, thus rendering subsequent displacement less liable to occur.

After reduction is accomplisht the simplest dressing which maintains apposition, gives perfect immobilization and allows free inspection of the parts, should be used. As a rule, no dressing completely enveloping the fracture, such as plaster-of-paris bandages, should be used at first, because it interferes with circulation, is hard to remove, if such becomes necessary, and does not allow inspection of the seat of fracture, which is important, in order to detect recurrence of displacement. Moulded plaster-of-paris splints, however, are often very useful in the early treatment and makes one of the best of supports. It is a good plan, I think, in many fractures, particularly Colle's, to remove the dressing from time to time to allow free inspection, in order to be assured that reduction is being maintained. I have used

*Abstract of paper read before the Richmond Academy of Medicine and Surgery.

this plan in a number of instances and have never had occasion to regret it.

Fractures involving the shaft of long bones, such as the humerus and femur, require perfect immobilization for six or eight weeks, and in old people for a longer period. Unless this is adhered to strictly, fibrous union or non-union will occur. I do no hesitate to say that I am not much of a believer in the ambulatory treatment of fractures. I would recommend it for extremely old people where confinement in bed for a long period of time would mean death. Fracture of the neck of the femur, under these circumstances, after confinement to bed for about two weeks could be treated by the Thomas' hip splint. Just here I will say that I believe all fractures of the neck of the femur, it matters not how old the patient may be, should be treated and not regarded as hopeless. Many cases where union would least be suspected will recover with good results.

In separation of an epiphysis and diaphysis perfect reduction is absolutely essential to success. It is claimed by good authorities that if complete reduction is accomplisht ossification is not apt to occur, and arrest of growth does not result, but if reduction is incomplete ossification takes place with failure of growth.

The examination is best completed by use of the fluoroscope, both before and after application of the dressing.

Before concluding, I will say a few words about the treatment of ununited fractures. Formerly it was thought necessary to wire the bones together in order to secure union; now we know that this is not only unnecessary but usually objectionable, because the wire remains and may set up irritation. All that is necessary is to freshen the surfaces, bring them in apposition with as little disturbance to the periosteum as possible, and retain them. Chromic catgut is used with best results, as it holds the fragments until sufficient callus is poured out to fix them, tho no suture at all is necessary sometimes, if the bones are placed in apposition and a plaster cast applied at once. Union in such cases is always slower because there is no periosteal bridge, it taking place from the medullary canal and by granulation of the bone surfaces.

REPORT OF SUCCESSFUL REMOVAL OF CARCINOMA OF THE BREAST, WITH SOME GENERAL FACTS PERTAINING THERETO.

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Carcinoma is the most common form of malignant tumors of the breast. Epithelioma and sarcoma are much less frequent. Carcinoma of the breast was found to exist 1,232 times in 7,880 cases of cancer of this gland. The uterus, stomach and breast in the order named are most frequently attackt by carcinoma. An author who has analyzed a large number of these cases states that 40 per cent of all cancers are confined to the breast. Carcinomas of this gland are much more common than were reported half a century ago.

Eighty per cent of all tumors of the breast become malignant. Out of 440 cases of tumors of the breast, Billroth only found 18 per cent non-malignant. Only 1 per cent of carcinoma is found in the male breast. Puerperal mastitis has been found to precede 30 per cent of the cases of carcinoma.

Trauma is the exciting cause in 13 per cent of all cases. Carcinoma is much more common among white than colored people, and twice as frequent among foreign-born whites as among our native population. It is much less frequent in tropical than in other zones; it is most frequent in damp, low-lying unsanitary districts, and it is more common in New England and on the Pacific coast than it is in the Mississippi valley and southern sections of the United States. Climate and preponderance of the negro race may to some extent explain these facts.

Gross reports heredity as the cause in 4 per cent of the cases, while Williams traced heredity in 24 per cent of his cases.

Like most diseases, the immediate cause of cancer has been attributed to microbic origin, and, while a certain protozoon has been suspected, no definite proof has been made as to the specific germ.

The average age for the development of cancer has been placed at 48 years, with numerous examples to the later extremes of life. Carcinoma is contemporaneous with the declining breast; locally, it is found most frequently in the upper and outer hemisphere of the breast nearest the axilla. Carcinoma of the breast spreads by lymphatics from original nodule to the glands of axilla during the first or second month of the invasion; the skin also becomes involved thru these lymphatics, and for this reason much skin which looks normal around the nodule should be extirpated in doing a radical operation for the growths.

Secondary deposits may be expected in the viscera after two years. Lungs and liver are the most frequent sites of metastases.

Cancerous cachexia is due to the absorption into the general system of the broken-down structure resulting from the ravages of the disease; removing this source of infection is an indication for an operation in which we cannot expect to promise other than temporary relief. Nearly all cases improve after operation, becoming more comfortable after this drain and pain is stopt.

The average life of the cancer patient is about two years, tho the scirrhus variety has been known to last for a dozen or more years.

Whenever there is a tumor in the breast at any time, we advocate its removal on account of the tendency of benign tumors to become malignant, and if the tendency to spread to adjacent glands by constant manipulation, as these cases pass from one surgeon to another, asking for opinions or verification in diagnosis. They are malignant according to the amount of connective tissue contained in them, and are usually much more aggressive in young than older subjects.

Epithelioma usually originates in the skin, while carcinoma begins under the skin.

It is all-important to call in the microscopist to determine the advisiability of an immediate operation in all doubtful cases; the part examined should be taken from the actual growth by an exploratory incision. The operation is much more likely to be successful in removing these malignant growths if done before the skin and lymphatics have been generally involved, and no operation is too extensive, provided infected material remains to be removed.

Many benign tumors in their origin later take on the malignant type; this is specially true when they are subjected to any traumatism, such as a blow or injury. Owing to cracks, traumatism and Paget's nipple, and its exposed position, we are more likely to have the tumor begin at this point. The tumor is movable at first, soon becoming attacht, however, to the skin and pectoral fascia; this binding down and fixation of the disease is the origin or cause of the retracted nipple, which is a point in diagnosis; next most frequent site of carcinoma is under and around the nipple; and the left breast is more often affected than the right. In only two cases out of 870 were both breasts attackt simultaneously; hence, if both breasts are involved at the same time, it is not likely to prove carcinoma. If the tumor of the breast is of rapid development, it is softer colloid carcinoma. The slow growths are of the scirrhus variety, and are less rapid in terminating. Carcinoma spreads thru the lymph-channels—the first lymphatic gland leading off from the tumor arrests the cancer-cell in the lymph-channel, bringing about secondary enlarged nodules in the lymphatic system. The involvement of the skin in ulceration is brought about by pressure and lymph-channel infection, but this is usually secondary to the involvement of deeper lymphatic glands. I have seen carcinoma extending into the chest thru the lymphatics, accompanying the arteries; in the same way it may be transferred to the liver, lungs or to the opposite breast.

In the early stages of carcinoma diagnosis is very difficult; just at the time we ought to be exact is when we are in most doubt, but as a general rule we make no mistake in removing any tumor occurring in the breast of a female between the ages of 40 and 50 years. Retracted nipple and dimpling of the skin over the tumor, with enlarged axillary glands matted together, make a pretty certain clinical picture of carcinoma. After the tumor has ulcerated, nodules have been found in the skin of the chest; enlargement of other glands make a comparatively easy diagnosis without the aid of the microscope.

I have recently operated on such a clinical case, which started from the kick of a child in the upper quadrant of the breast of a woman who had never borne children. An incision was made above the line of the pectoralis major muscle around the upper border of the breast; a second incision was begun at the middle of the anterior axillary fold, extended around the lower margin of breast—the cut was pear-shaped with the apex in the axilla. The skin was dissected back so as to expose the margin of the mammary gland; the pectoralis major muscle was exposed and divided at the humeral end and removed with its fascia. The axillary space was laid open and adipose tissue entirely removed. There was no supra-clavicular gland enlarged so this space was not opened. After all the infected area, so far as we could determine, had been removed. I approximated the edges of the wound with catgut suture. We were very fortunate

in this case to have sufficient redundant skin tissue to draw around from the sides to enable us to cover over the raw surface; true, the tension on the suture was great, but this we relieved to some extent by inch adhesive straps, which we applied around the body. We got union by first intention. We were careful to catch every vessel that bled at once, and used as little traumatism as possible in manipulating the parts. We left in a gauze drain for twenty-four hours in the most dependent portion of the cut. There was some discoloration of the skin of the axilla, but no actual sloughing; an abundant aseptic dressing was applied over the breast, including the arm, which absorbed all the secretion from the wounded lymphatics and vessels.

While complete eneucleation of the breast and axillary glands may be classt as a major operation, the mortality of the same has been reduced as low as 2 per cent, while some operators have a clear record of 100 cases with no mortality.

The present method of the complete removal of all enlarged glands and lymphatics reduced the recurrence of carcinoma after the three year limit to 50 per cent. These results need not be expected or promist in neglected or advanced cases where metastasis to internal organs have perhaps taken place before the case is submitted for operation. Many cases which we cannot cure are temporarily benefited by an operation which cuts away the diseased tissue.

Beatson removes the ovaries and gives thyroid extract in recurrent cases, this being done on the theory that removal of the ovaries prolongs lactation, thus preventing the degeneration of mammary glands.

The serum and toxine treatment of cancer has not stood the test of the general clinician, and the x-ray treatment is only applicable to ulcerated cases. There is no drug treatment for cancer that has stood the test of time.

Pain inflicted by cancer-paste and fakirs is much more severe than would be caused by operative procedure, and its sloughing process cannot be controlled nor can it be forced to reach all the inflicted parts; it is consequently an incomplete, painful and unsatisfactory procedure.

These rambling facts, about the advantages of an early operation in carcinoma, have prompted me to offer these suggestions to encourage others to advise patients of the possible benefits to accrue from early operation and the almost hopelessness of cases left too long without the advice of a competent surgeon.

TREATMENT OF ULCERS.*

By Alfred L. Fowler, M. D., Atlanta, Ga.

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A satisfactory definition of an ulcer? We haven't one, and it seems as tho we must content ourselves with the loose definitions offered by text-book manufacturers and those contained in the current literature of the day: An ulcer is a pathological condition, and the underlying idea is that of infection. It is a molecular destruction of the skin or mucous membrane, in which there has occurred, at least temporarily or even permanently, an interference with the process of repair; and regardless of the primary cause of its origin, a pyogenic infection has occurred. It presents a surface more or less covered with granulations, usually of an atypical type and owes its existence to an excess in action of the retrograde changes over those of repair. There is always a tendency towards peripheral extension of this surface.

Ulceration, the process by which an ulcer is produced, always implies infection, molecular death and chronicity.

The diseases which most frequently give rise to ulceration are syphilis, tubercle, leprosy, glanders and cancer. These ulcers are generally chronic and assume a granulomatous-tissue type.

Ulcers may occur as local expressions of constitutional disease or be entirely local in their origin.

Those of constitutional origin are characterized by their tendency to local manifestations at the points of least resistance, e. g., scurvy. Then there is a class of tropho-neurotic origin which occur in the progress of certain diseases of the nervous system, distinctly the paralytic forms, which frequently accompany locomotor ataxia. Of this type perforating ulcers of the foot may be mentioned.

Certain drugs, notably phosphorus and mercury, produce ulcers of the mouth when the vitality at this point is lowered and infection becomes easy.

Local conditions occasioning ulcers may be divided into predisposing and exciting causes.

PREDISPOSING CAUSES.

1. Perverted vascular action, as ischemia and active and passive hyperemia. Of the most frequent causes of chronic ulcers should be mentioned passive hyperemia, particularly that form known as varicose ulcer.
2. Tumors, particularly if their growth be rapid, as in the malignant forms, when ulceration is produced by pressure, or by growing away from their blood-supply.
3. Feeble circulation with interrupted pressure giving rise to decubitus or bed-sores. This condition occurs much more frequently after injuries to the spine.

EXCITING CAUSES.

1. Local infections, with tissue-death in consequence.
2. Traumatism, in which there is an interference with the process of repair.
3. Extensive loss of skin-surface, as in burns.
4. Sloughing of flaps, particularly of stumps of amputations.
5. Various mechanical interferences with the process of repair.

CLASSIFICATION.

Ordinarily, ulcers are divided into acute and chronic—the former being limited to the period of active infection and spreading destruction, and the latter describing that in which a condensation of cells have formed a sanitary cordon (miscalled pyogenic) about the ulcer. Histologically, ulcers are of the same construction as are the walls of an abscess. Now and then the reparative process, in these cases, about equals the retrograde changes and the ulcer practically remains stationary.

Ulcers are further classified according to some prominent clinical symptom associated with them. An ulcer may be healthy or indolent; in the former the granulations are typical and the granulating process proceeds normally. In the latter the reverse obtains, and there is no tendency to heal.

Fungous ulcers are those in which the granulations outgrow their usefulness, and are being manufactured at altogether too rapid rate.

The ulcers are known as erethistic or irritable when the surface is exquisitely sensitive, as in fissure-in-ano and corneal ulcer.

Sloughing ulcers are those in which there is actual visible tissue-death in connection with the ulcerative process.

The term phagadenic is applied to ulcers in which there is a gangrenous tendency and rapid spreading.

Certain descriptive adjectives, which explain themselves, are used in connection with the borders and surfaces of ulcers. These are healthy, indurated, callous, tumid, edematous, undermined, livid, inflamed, etc.

TREATMENT.

In suggesting a plan of treatment for ulcers it must not be forgotten that what we have to deal with is an infected, suppurating area whose size is limited only by the penetrating power of bacteria and the resistance offered by the surrounding structures. The primary infection may have been specific and later become mixt when the pyogenic infection produces new characteristics to that of the primary one.

It is also known that the toxines are occasionally quite as destructive as the infecting organisms, and that singly or combined, they destroy the reparative cells which become pus-cells as the process extends. So the first and essential step in the local treatment of ulcers suggests itself. No treatment of ulcers can be successful unless the cause can be removed. The first indication is the destruction of the infecting agent and the changing of the infected surface into one as nearly aseptic as possible, so that the embryonal cells may retain their vitality and be utilized in the process of repair. In short, a clean, fresh wound is made of the ulcer, its indurated borders are freely detacht, and the granulations that have become indolent are removed in toto. It is only by such radical procedures that we can successfully treat ulcers and be rewarded by speedy recoveries.

The usual plans of treatment only temporize and fail to meet these requirements. Even better results were obtained by Edward Home over a hundred years ago. These cases are reported in his book on "The Treatment of Ulcers," which was pub-

*Read before the Medical Association of Georgia, at Macon, April 20, 1904.

lisht in 1811. His results were better than any of those obtained by the temporizing methods of today.

The radical treatment now pointed out gives a clean, fresh wound with no obstruction to the reparative process.

There is, perhaps, no subject in surgery in the treatment of which surgical principles are so far lost sight of, and yet the condition is one that calls loudly for surgical intervention.

The first effort in the treatment should be in the direction of removing the cause, which may be done by local, or may require constitutional measures.

It is usual to divide the treatment into general and local. If the ulcer be healthy, one in which the cells are typical, the general treatment is of slight importance. The epithelial covering generally keeps pace with the granulating process, and all that is necessary is the prevention of external irritation. On the other hand, if the vitality of the patient is below par, and there is general poisoning from absorption, constitutional treatment should begin promptly, as in syphilis, scurvy, etc. In the local treatment of the comparatively recent ulcer, where the granulations have come to a standstill, the sharp spoon or curet will stimulate them to renewed efforts.

A healthy ulcer is covered with small, bright, red granulations. They do not bleed on touching, they are painless, and their growth rapid. Their edges are soft and show the characteristic opalescent blue line of proliferating epithelium. The entire portion involved is movable, the discharge is purulent and yellow, and the adjacent parts are not inflamed.

The great object to be kept in view, with regard to the management of ulcers, is that of ascertaining with accuracy their true nature. Too much attention cannot be paid to this investigation.

In foul ulcers, with offensive discharges and much inflammation, hot flax-seed meal poultices, applied every fifteen minutes, for four or five hours at a time, facilitates the separation of the sloughing masses. When this has been establisht these ulcers should be treated surgically and physiological rest should be insisted on.

As the greatest objection to poultices, in most instances of this kind, is their weight, it becomes an object of attention, wherever it can be done, to let the limb rest upon the poultice, and not the poultice upon the limb.

The inflammation that generally accompanies ulcers is met with by absolute rest, elevation and hot fomentations, when indicated. In ulcers whose edges are calloused we must employ radiating incisions, or completely cut the edges away. In an immovable ulcer when the parts are adherent and anchored to structures beneath it, an effective method is to partly or completely surround the ulcer with several incisions thru the deep fascia which sets it free from its anchorage and permits it to contract. Excessive or superfluous granulations (proud flesh) should be scraped away with a curet or cut away with scissors. In these cases the lunar caustic stick will prove sufficiently stimulating, usually, for the granulations to regain their vitality and be utilized in the reparative process.

The truly irritable ulcer is, perhaps, as distressing a complaint as any in surgery, and is a condition due to the exposure of nerve-filaments and the destruction of nerve-sheaths. One must find the exquisitely sensitive granulation with the point of a probe, then divide it with a tenotome, or curet or burn it with the solid stick of silver nitrate. If it fail to heal, it will be necessary to skin-graft. Among the most common sites for irritable ulcers are near the ankle, in the matrix of the nail (ingrowing nail), over the tibia, and in the anus (fissure).

Phagadenic ulcers, commonly venereal, are the result of profound infection of tissues whose vitality is below par. Their surfaces present no granulations and are covered with sloughs, their edges are thin and undermined, and they rapidly spread in all directions. This type of ulcer should be touch't with pure nitric acid or the actual cautery in selected cases. Moist antiseptic dressings and antiseptic fomentations should be included in the treatment.

In ulcers of the leg, which are frequently accompanied by much swelling, the result of passive congestion, the first step in the treatment is to reduce the swelling. This can be most effectively done by the application of wet bandages with uniform pressure, begun at the base of the toes, and carried almost as high as the knee. If cotton bandages are used, they should first be wrung out in water, otherwise they will stretch and fail to accomplish the purpose desired. The best time to apply these bandages is in the morning before the patient gets out of bed. Advise the patient to keep the leg elevated higher than his body, on pillows, the night before it is intended to apply the bandages, and gravity will aid largely in reducing the passive congestion. Martin's rubber bandages are also useful, but the patient cannot bear these long at a time.

After the passive congestion is thoroly reduced, an excellent plan frequently employed is to substitute for the bandages an adhesive rubber plaster boot. This, of course, necessitates shaving the leg before the boot can be applied. One begins at the base of the toes with strips about six-eighths of an inch in width, allowing them to overlap, and extends them with uniform pressure nearly as high as the ulcer, discontinuing encircling the limb with the plaster just before reaching this point. This complication having been met, only the ulcer and its cause are left to deal with. Such an appliance gives the structures a uniform and steady support, and is on the same principle that Wiseman recommended so strongly more than two centuries ago by means of the laced stocking.

In varicose ulcers of the leg the cause can be removed if only the superficial veins are involved. Consequently, resection of the saphena veins fails to give good results when the deeper veins are varicosed. These veins are accompanied by nerves, the internal saphenous being joined by its companion nerve about the level of the knee-joint. Much of the pain in varicose veins of the leg is to be attributed to this fact.

John Hunter was probably the first among the older surgeons to practice taking up veins, so this is not new. In those days they only took up the dilated branches without obliterating the trunk, and it could not succeed, hence the practice fell into disuse. Today we obliterate the entire trunk, and if the deeper veins are not involved, we get pretty results. The longest incision the writer ever saw was one to obliterate the internal saphenous vein, nearly four feet long.

These radical methods are only objectionable because they carry with them a certain degree of dread to the mind of the patient, and any mode of treatment, however tedious and uncertain, is preferred by many patients to an operation, notwithstanding the sufferings, when carefully estimated, are too often ten times greater in the attempt to cure by palliative treatment than by the radical method. It is only under this prejudice that surgical operations are considered abstractedly, and when the disease for the relief of which they are performed is carefully considered, and the pain and distress of the one is balanced against the other, the prejudice will be completely removed, and that which forms a superficial view was regarded as cruel, will be found to be humane.

It is an absolute waste of time to be temporizing with these conditions when one can accomplish in two or three weeks, by the radical method, what six or eight months fail to do by the older methods. This most effective method for handling old and chronic ulcers is to anesthetize the patient, make a clean incision of the entire infected and affected area, leaving a clean, nearly aseptic wound to deal with; and the last step is that of skin-grafting, preferably Thiersch's method, in cases which resist.

SURGICAL TREATMENT OF RETRO-DISPLACEMENTS AND PROLAPSUS OF THE UTERUS.*

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The frequency of these two conditions is known to every practitioner of experience; and they are often co-existent. a retro-displaced uterus unless held up by adhesions gradually becomes a prolapst one, and a uterus first displaced downward eventually becomes retroverted also. Whenever the uterine axis is parallel to that of the vagina and supports are weakened, practically speaking, there is retro-displacement. Two conditions being present, i. e., displacement and prolapsus, two indications for treatment are obvious: restoring the uterus to normal position as regards the antero-posterior as well as the transverse plane of pelvis.

The normal uterus is freely movable and hangs between the rectum and bladder in an anteverted position, the os pointing to the posterior vaginal wall or lying in contact with it, and is supported: (1) by ligaments; (2) by tissue below the ligaments, consisting of muscles, fascia, etc. There are eight ligaments, four on each side. The chief support consists of the broad liga-

*Abstract of paper read before the North Carolina Medical Society.

ments, which are folds of peritoneum closely adherent, which firmly invest the body of uterus to pelvic wall, containing a certain amount of muscular fiber, continued from uterine wall, posteriorly reflected upward to rectum and posterior pelvic wall, anteriorly on the bladder and anterior aspect of the pelvic cavity. Next in importance are the vesico-uterine ligaments which stretch from the anterior surface of the uterus to the fundus of the bladder and thence to the anterior abdominal wall. The connection between bladder and uterus being less close than the rectum and uterus, less would be expected of these as a support. The third supporters are the round ligaments, which extend from each uterine cornu between layers of broad ligament into the external ring and lose themselves in the canal of Nuck; they contain striated muscular fibers, are subject to the influence of the will, and act as guy ropes, preventing the uterus from tipping backwards. The fourth support is the utero-recto-sacral ligaments which extend from the posterior attachment of vagina to the uterine cervix to be attacht to sacrum, dividing to inclose the rectum. These folds also contain muscular fibers. Between these folds is the pocket known as cul-de-sac of Douglas. The part the sacral ligaments play is very important (said by Jennings of New York to be the only ligaments that are taut while standing.) Between all these layers of peritoneum (called ligaments) are cellular tissue, nerves, blood-vessels, etc., which have undoubtedly some influence in supporting the uterus.

Other supports of the uterus are the tubular muscular canal (the vagina), which helps to hold up the uterus, this tube resting upon the muscular body of the perineum. Anteriorly, the body of the uterus is supported by the bladder, which acts as a "water cushion"; posteriorly, the rectum acts much in the same manner. Two layers of pelvic fascia aid in the good work: 1. The transverse plane (from middle of sacrum to lower border of symphisis pubis) making the roof for the vagina and base for the bladder. 2. The plane (also transverse) from tip of coccyx to the lower border of symphisis, representing a triangle with its base posteriorly and its apex anteriorly, which serves to keep the uterus pusht forward in normal position.

The perineum has also a supportive effect due principally to the levator ani and sphincter ani-muscles. The uterus being a movable organ, the normal position varies, but the means is, that the longitudinal line of the vagina should meet the one of uterus at external os at an angle of 45 degrees. To assist these is the intra-abdominal pressure exerting a force upon the posterior part of the fundus equal to 25 or 50 pounds.

Symptoms Which Call for Relief.—A retro-displacement and certain amount of prolapsus may cause no inconvenience, hence does not call for treatment; but later in consequence of interference of circulation, there may arise uterine catarrh, with excessive leucorrhea and the misplaced ovaries may cause all kinds and conditions of pain. Adhesions of uterus and adnexa to peritoneum, narrowing lumen of the gut causing persistent constipation) and pressure on the ureters (causing pressure nephritis) call for relief.

Of all the causes, perhaps childbirth (especially if complicated by pelvic peritonitis) is the most important, with its attendant laceration of the perineum; straining from constipation is also prominent; tight dresses; falls, etc., are also to be mentioned.

TREATMENT.

Attention to the general health is important, especial attention being directed to correction of constipation and regulation of dress to prevent downward pressure in the pelvis.

Pessaries as a rule do little good. In most patients they have been tried and found wanting.

Surgical Treatment.—When the perineum has been torn and the other supports are intact, repairing the perineum will suffice, but we know that the perineum alone has only a limited power in sustaining the uterus, for all of us have seen extensive tears of this organ with no displacements. The "Noble method" of dissecting up mucous membrane and uniting the muscular fibers and fascia is satisfactory, especially when the levatores ani and sphincter muscles are involved; and in my experience this has a considerable effect in supporting the uterus.

When the ligaments are relaxt, Alexander's operation has been extolled, but as the round ligaments normally have very little to do in supporting the uterus, and as so many cases are complicated by adhesions (in which even the most earnest advocates of the Alexander operation admit it to be impracticable) its field of application is very limited.

Ferguson of Chicago advocates bringing the round ligaments thru the rectus muscles and stitching them together, by median incision; while Reynolds of Boston pushes the round ligaments thru the broad ligaments and sutures them behind the uterus—each perhaps useful in a limited number of cases.

The operation perhaps most practist has been ventro-fixation in which the uterus is stitcht into the abdominal wound, which will certainly hold it there. But what about subsequent menstrual life and pregnancy? I find that it gives a woman a great deal of pain because we change one pathological condition to another of a fixt uterus, the pain especially during menstruation being markt. The text-books say now that the operation is only applicable where the patient has passt the child-bearing period. I am convinced that when we do this operation we should render the patient barren, and we can do this by taking a V-shaped piece from the ampullae of Fallopian tubes, and sew ing the serous membrane over the cut end of the tube with fine silk, or we can castrate.

Next we have the ventro-suspension, which consists in attaching the peritoneal coat of the uterus to the parietal peritoneum of abdomen, which, by continued pulling eventually forms a "ligament," which allows some motion of uterus. This has proven the most satisfactory in my hands, altho I have had notable failure in this. The advantages of this operation are the ease and rapidity of operation and freedom from danger.

There is therefore no ideal operation for these extreme cases. I have in my mind's eye, and shall try it in such cases, this operation: Repair at first operation all external tears, then shorten the round ligaments by bringing them back of uterus, then lapping over in form of a cross the broad ligament (being careful not to compress any important vessels), then ventro-suspend and render sterile the woman. The uterus should be curetted at the first step in all these operations. [Why not make a hystero-salpingectomy and be done with it?—Editor.]

Labor will effectually try any of our methods and a temporary cure is not very assuring to an operator. Possibly, with a more skilled operator than myself, these conditions might be different, but in reading the discussions of this subject by our leading operators, I find the various methods lauded and then condemned, which leads me to infer that they all must have some failures, and that perfect cure is not so easy.

Operation for Hernia.

In a contribution to American Medicine entitled: "A Study of Ninety-one Operations for Relief of Hernia," Dr. Orville Horwitz, of Philadelphia, draws the following conclusions: 1. The safety of the patient as well as the lowering of the mortality in strangulated hernia depends on gentle taxis being exerted for a short period, which if unsuccessful, should be succeeded by an immediate operation. 2. Herniotomy for the relief of strangulated hernia in the aged is not a dangerous operation, provided it is performed as soon after the constriction has taken place as possible. 3. An inflamed hernia should not be treated by taxis, but should be subjected to an operation. 4. No one method of attempted radical cure is applicable to every variety of rupture. The Bassini is suitable to the largest majority; the Bloodgood for those in whom a large abdominal ring and weak or atrophied conjoined tendons exist. The relief of special forms and conditions of hernia must be met by the ingenuity of the surgeon, selecting the operation to the indications presented. 5. The palliative operation is applicable to a large number of selected cases of reducible hernia in which the protrusion cannot be kept within the abdominal cavity by means of a truss, and also in some forms of incarcerated hernia. 6. A radical cure may be safely attempted on patients between the sixth and the sixtieth years. 7. Individuals who submit to what is known as the "palliative operation" should continue to wear trusses after recovery. 8. In cases not applicable to a routine method of operation, the surgeon should strive to do what in his judgment would be the best means of effecting the removal of the entire neck of the sac on a level with the parietal peritoneum; he should, if possible, firmly close the opening in the peritoneum after the removal of the sac; he should obliterate the depression of the peritoneum in the vicinity of the internal abdominal ring, bring in apposition the structures, and close the apertures which form the canal thru which the rupture protrudes. 9. An aseptic result following a radical operation, with primary union, is essential to obtain a permanent cure of hernia. 10. In cases of undescended testicle associated with hernia, every effort should be made to save and transplant the organ. 11. The method of operating for umbilical hernia suggested by Mayo is probably the most satisfactory for that variety hitherto suggested. 12. Absorbable sutures are preferable to those of non-absorbable material.

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—EDITED BY—

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EDITORIAL NOTES.

Sexual Perversion in Woman.

While masturbation is not quite so common among girls and women as among boys and men, sexual perversion is very often met—and more frequently suspected to exist by the carefully observant doctor. The following forms are worthy of mention:

SAPPHISM.

Definition.—Sapphism is the production of the orgasm in the female by titilation of the clitoris with the tongue, generally by another woman—sometimes a man performing the part of **lingua in introitus,** while the woman accepts the male member in the mouth (cunilinguism). This loathsome vice originated with Sappho, the Greek poetess who lived upon the island of Lesbos about 600 B. C., hence the name Lesbian love applied to the act.

TRIBADISM.

Definition.—That perversion of the genital sense shown in women who seek the caresses of one of their own sex. The act is usually accomplisht by lingual irritation of the clitoris and labia minora (Sapphism), but sometimes by mutual digital titilation. Rarely the clitoris of one of the participants is sufficiently enlarged to permit "sexual intercourse" by its introduction into the introitus of the companion. The "love" of the notorious Freda Ward, for which she murdered her room-mate rather than see her a bride, was no doubt based upon this form of sexual perversion, of so serious degree as to be insanity.

RELIGIOUS EROTICISM.

The woman with sexual desire ungratified turns to religion, to music or to art as an outlet for her feelings. The most expert of female artists and the best poetesses and authoresses are those with sexual fires unquencht; or sexual perverts. Religious ferver and ungratified sexual longing are often the same thing—tho probably unconsciously. The boundary between religion and lust cannot be defined—particularly in women. Krafft-Ebing is quite correct in stating: "The cause of religious insanity is often to be found in sexual aberration." It is well voiced in that old Protestant prayer:

"Oh that I had found thee, blesst Emanuel;
That thou wert with me in my bed
To bring delight to body and to soul!"

EXTRA-GENITAL ORGASM.

Certain women acquire the habit of producing an orgasm by irritation of parts not normally implicated in the sexual act. I have, for example, two beautiful stones removed by suprapubic cystotomy, the nucleus of each being a hairpin—lost in masturbating by irritation of the urethra; the one from a girl of 16, the other from an old maid patient of Dr. G. A. Spreckelmeyer, of Berger, Mo. I had once a patient with absence of vagina who used the urethra with success for copulation. Hyrtl (Typographical Anatomy) quotes V. Hildenbrandt's report of a girl who had her mammae suckt by her lover until orgasms were produced; and subsequently she succeeded, by constant pulling the nipples, in sucking them herself—thus producing the most intense pleasure. It is not at all uncommon to find women who experience the most intense pleasure from manipulation of the breasts or pulling of the nipple and some cannot reach the culmination of the sexual act without such carressing. Among French prostitutes it is common practice to have intercourse between the mammae; and these perverts get as much satisfaction as if the act were normally performed.

SADISM.

Definition.—Production of the orgasm possible only by committing or witnessing some act of cruelty. Some women at the culmination of the sexual act bite the male companion. Others—probably masturbators—present even stronger evidences of psychopathia: not only does lustful feeling awaken the impulse to cruelty, but inversely cruel acts may lead to sexual excitement or even gratification. I once knew a girl who confesst that she could produce an orgasm—with the most exquisite sexual pleasure—when she would squeeze the life out of a young chicken! Sadism is most likely to develop in women whose husbands complete the sexual act before the woman does—leaving her sexually excited, ungratified and eventually (after many failures) angry. It is far less frequent than in the male sex. Krafft-Ebing says: "That sadism is less frequent in women may be easily explained. In the first place sadism—in which subjugation of the opposite sex forms a constituent element—in accordance with its nature represents a pathological intensification of the masculine sexual character; in the second place, the obstacles which oppose the expression of this monstrous impulse are, of course, much greater for woman than for man. Yet sadism does occur in women, and it can only be explained by the constituent element: the general hyper-excitation of the motor sphere." (Psychopathia Sexualis). In history Messalina is perhaps the best known example of this form of sexual perversion, tho Catherine de Medici (the instigator of the massacre of St. Bartholomew) was also conspicuous.

MASOCHISM.

Definition.—The opposite of sadism—impossibility of completing the sexual act without passively submitting to some form of cruelty. Among Slavonic women the highest manifestation of a husband's love is said to be a whipping. On account of the inherent modesty of women and the disinclination of men to reveal the secrets of their marital relations, but few cases of masochism in women have been reported.

FETICHISM.

Definition.—Enthusiasm over or even worship of certain portions of the body in obedience to sexual impulses. In the more serious pathological states of erotic fetichism the morbid psychical perversion may not be limited to certain parts of the body alone, but may also include inanimate objects (articles of apparel, etc.). In these cases coitus is completed, if at all, by concentration of the mind upon the fetich, but even then is usually unsatisfactory. More often after the male partner has been satisfied by the orgasm terminating copulation, the woman if at all excited by the contact secretly produces the orgasm on herself by manipulation of the genitalia coupled with the peculiar application of her mind to the fetich—either observed or pictured in the mind. Many women, scarcely to be regarded as perverts, do not regard coitus as the real means of sexual gratification—the conjugal act can only be accomplisht satisfactorily by simultaneous manipulation of the breasts; by sucking of the tongue, etc.—a condition closely allied to fetichism. Still others cannot complete the sexual act by coitus alone—they must have the genitalia (especially the clitoris) carresst for a long time by the man's hand, sometimes for a half hour or more before they feel that copulation will produce the orgasm; such women during the "working-up" period experiencing the most exquisite pleasure, chiefly by concentration of the mind upon the particular object of their inner sexual worship. These women are happy if they possess the courage to tell the husband what is needful to ensure their sexual comfort, provided he acquiesces; if not, they become indifferent or even cold toward him and either secretly practice manustrupration, giving full vent to their fetichistic impulses, or secure a lover who will gratify their desires. That is, if the fetichism is not grossly pathologic. In the latter case, after the victim has found that sexual intercourse does not satisfy, coitus is not only incomplete and forced, but is particularly unsatisfying and exhausting. All doctors are familiar with this "sexual neurasthenia," tho too many are ignorant as to the cause. When the fetichism is strictly pathological (e. g., some article of dress or other inanimate object instead of some part of the body—physiological fetichism), it seems, according to Krafft-Ebing, "to arise only on the basis of a psychopathic constitution that is for the most part hereditary, or on the basis of existent mental disease," and is of far greater import than those cases which end only in the neurasthenic state. While many cases of this trouble have

been reported in males, very few observations have been made of afflicted women—for reasons at once apparent.

HOMO-SEXUALITY.

Definition.—Great diminution or total absence of sexual feeling for the opposite sex, with substitution of sexual feeling and instinct for the same sex. It is also called "antipathic sexual instinct." In early childhood boy and girl are mentally sexless—the latent period—sexual neutrality—in spite of dress, education, etc. But at an age much earlier than generally supposed rudiments of a feeling akin to the sexual are developt. Out of this "If the sexual development is normal and undisturbed, a definite character corresponding to the sex is developt," psychical changes keeping pace with the physical. If both ovaries be removed before the sexual instinct is aroused, it is doubtful if it be possible by any means to arouse it; whereas in many double ovariotomies and hysterectomies in potent patients, I have noted an increase rather than diminution of sex feeling—never a tendency to homo-sexuality. This goes to prove the assertion of Krafft-Ebing: "That the physical processes taking place in the genital organs are only co-operative and not the exclusive factors, in the process of development of the psychosexual character, is shown by the fact that, notwithstanding a normal anatomical and physiological state of these organs, a sexual instinct may be developt which is the exact opposite of the characteristic of the sex to which the individual belongs." In other words, homo-sexuality is due to psychic and not to pelvic troubles. "In nearly all such cases the individual tainted with inverted sexual instinct displays a neuropathic predisposition in several directions, and the latter may be brought into relation with hereditary degenerate condition—hence this anomaly of psycho-sexual feeling may be called, clinically, a functional sign of degeneration." (Kiernan). The sexual invert may not attempt the sexual act with one of the same sex—the mere existence of a perverted feeling for the same sex is sufficient to be regarded as pathological. Indeed, women may practice mutual manstrupration or copulation with enlarged clitoris (as in prison, in brothels temporarily closed, etc.) without homo-sexuality being present—there being immediate return to normal sexual intercourse as soon as the obstacles to it are removed. But when the girl attains the age of womanhood without developing the esthetic, ideal, pure and free impulse which would draw her to a man, the chances are ten to one that she is the victim of self-abuse, and if thrown with vicious companions, homo-sexuality is apt to be acquired—a form distinct from the rarer congenital variety. Causes other than masturbation, evil companionship and heredity are a morbid fear of pregnancy, a hypochondriacal dread of infection and a general moral defect. The mildest degree is that in which a glow of sexual feeling accompanies bodily contact—the loving hug of the constant companions or "chums" at high school being a familiar example. Most of these girls are unconscious of the condition; but even tho sensual consciousness be awakened (a sort of neurosis) normal sexual feelings may reappear and assert themselves and matrimony happily end the trouble. Many hysterics and cataleptics are of this type—but the defect is skillfully concealed. In the more serious cases, if early restoration from the antipathic sexual instinct be not obtained, defemination occurs: the patient undergoes such a deep change of character, especially her feelings and inclinations, as to mentally become a man, and normal sexual intercourse utterly repugnant. The possibility of a cure is very remote. Such patients may usually be regarded as paranoiacs.

[To Be Continued.]

MINOR NOTES.

Doctor Saylor Dead.—Dr. William H. Saylor, one of the most prominent men of Portland, Ore., died June 8, from heart disease, aged 60. He was a graduate of the Williamette University of Medicine, Portland, Ore., in 1869; one time president of the Oregon State Medical Society; former professor of anatomy at Williamette University, and later professor of clinical surgery and genito-urinary surgery in the same institution. He was president of the State Board of Medical Examiners of Oregon.

Prof. Montgomery Operated On.—Dr. Edward E. Montgomery was operated on at St. Joseph's Hospital in Philadelphia recently for mastoid disease. He has suffered for some time with suppurative middle-ear disease, but was thought to be free from mastoid involvement. The symptoms, however, recently became more pronounced and operation was decided on. At last reports he was convalescing.

President Shaw.—That progressive surgeon, Dr. E. B. Shaw of Las Vegas, has been elected president of the New Mexico Medical Society.

Ambulances for Japan.—In July two hundred and thirty-six ambulances were shipped from Indianapolis for Japan.

Chairman Kelly.—The gynecological section of the Congress of Arts and Sciences to be held in St. Louis under the management of the Exposition September 24, will be presided over by Dr. Howard Kelly of Baltimore.

Chairman Beck.—Dr. Carl Beck of New York is to be the chairman of the section of surgery in the Congress of Arts and Sciences to be held at the St. Louis Exposition. This section will meet Friday, September 23.

American Gynecological Society.—At the Boston meeting, Dr. E. C. Dudley of Chicago was elected president for the ensuing year. Dr. H. C. Coe of New York, first vice-president; Dr. H. D. Fry of Washington, second vice-president; and Dr. J. Riddle Goffe of New York, secretary. The following were elected to membership: Dr. Palmer Findlay of Chicago, Dr. F. S. Newell of Boston, Dr George Gellhorn of St. Louis and Dr. T. S. Cullen of Baltimore. The next meeting will be held in Niagara Falls.

LITERARY NOTES.

Text-Book of Alkaloidal Therapeutics.

The administration of alkaloids and concentrated drugs instead of the crude and unreliable preparations of a few years ago has become so common that an exact treatise on alkaloidal therapeutics was badly needed. Drs. W. F. Waugh and W. C. Abbott, the well-known editors of the Alkaloidal Clinic, who have done so much to advance this branch of medicine, have recently issued a most excellent book of 400 pages upon the subject. The motto is one which will appeal to every thoughtful doctor:

> "The smallest possible quantity
> Of the best obtainable means
> To produce the desired result."

Like the United States Dispensatory, the subjects are arranged alphabetically, while a copious index gives cross-references to all sorts of symptoms and diseases—thirty "remedies" being given for epilepsy, for example. The therapeutic nihilist will simply be astounded at the claims of the authors; the doctor who still believes in the curative virtues of medicine but who sticks to Galenical preparations will be gratified by learning there is something better; and the confirmed Alkaloidist will rejoice, for herein he receives a reliable guide. Get it and study it.

Ball's Ophthalmology.

Modern Ophthalmology. A Practical Treatise on the Anatomy, Physiology and Diseases of the Eye. By James Moores Ball, M. D., Professor of Ophthalmology in the St. Louis College of Physicians and Surgeons. With 417 illustrations in the text and numerous figures on twenty-one colored plates, nearly all original; 820 pages, extra large royal octavo. Price, extra cloth, $7 net; half Morrocco, $8.50, net. F. A. Davis Co., publishers, 1914-1916 Cherry street, Philadelphia. For long it has been a reproach on the great city of St. Louis that no book of any decided importance has been written by any of its medical teachers. This criticism no longer holds good—Dr. Ball has written the neatest, clearest and altogether best one-volume treatise on diseases of the eye that has ever appeared in the English language. After a careful reading I can quite agree with the statement in Medical Bulletin: "It is beyond the least possibility of question the most sumptuous, the most instructive, and the most practical volume ever issued on the eye. This work has been prepared with due reference to the requirements of the entire medical profession. It is a work which is adaptable to the oculist, to the surgeon, to the general practitioner, and to the student. If there was any

possible manner from the mechanical standpoint that the book could have been improved, careful critics to whom the book has been submitted have thus far failed to suggest it." Not only has the author written with care, drawing largely from his own extensive, practical experience, as well as a close and thoro study of the best literature, but the publishers have done magnificent work in its issuance. The more than 400 beautiful photo-engravings, colored plates and pen-drawings make the book very attractive as well as valuable. St. Louis is certainly to be congratulated upon being the home of the author of a work which is destined to attract attention in every part of the world.

Dawbarn on Cancer.

The Treatment of Certain Malignant Growths by Excision of the External Carotids. By Robert H. M. Dawbarn, M. D., Professor of Surgery and Surgical Anatomy in the New York Polyclinic Medical School and Hospital; Visiting Surgeon to the City Hospital, New York, etc. (Samuel D. Gross prize essay.) Eight volumes; pages xiii-192. Extra cloth, price $2 net, delivered. F. A. Davis Company, publishers. Philadelphia, Pa., 1914-1916 Cherry street. An interesting book this. The author received $1,000 for writing it—the S. D. Gross prize; awarded the author by Drs. John B. Roberts, J. Ewing Mears and William J. Taylor of Philadelphia. Its chief attraction, perhaps, is the large number of case-histories showing the effect of "local starvation" by shutting off the blood-supply of non-operable malignant tumors. A remarkable number of apparent cures in otherwise hopeless cases has been secured by ligation of arteries, especially in the neck. Enthusiasts must not be lead astray; in doubtful cases it is best to remove the growth and tie the afferent vessels also; only in cases unquestionably beyond the limit of possible cure should the method be tried. Sometimes most marvellous results may be obtained. Once in the practice of Dr. W. B. Dewees of Salina, Kan., I opened the belly and found far advanced carcinoma of the uterus—utterly beyond removal; I tied the ovarian and uterine arteries and closed the abdomen; the woman is still alive, 15 years afterward, which is in line with Dawbarn's book.

GYNECOLOGICAL NOTES.

Apostoli Treatment.

Once more Dr. G. Betton Massey of Philadelphia calls attention to this subject. In Journal of American Medical Association he analyzes 110 personal cases treated during the past sixteen years. His conclusions are: 1. A prolonged observation of cases of fibroid tumors of the uterus under the Apostoli treatment teaches that three-quarters of the cases subjected to the method will be practically cured, as attested by inquiries made from three to sixteen years after the cessation of treatment. 2. The cases that responded poorly, or not at all, to this treatment are not harmed by it, when properly applied, and heroic measures may then be adopted with the certainty that milder means are of no avail. 3. Hemorrhagic and interstitial fibroids are best adapted to the Apostoli treatment, while subperitoneal or degenerative fibroids and those complicated with pyosalpinx are least adapted to be relieved by it. 4. So far as his inquiries and circulars show, there have been but seven deaths among these 110 patients during the sixteen years or less that they have been under his observation. It is an interesting fact, moreover, that but one of these deaths was due to the progress of the growth itself, proving the non-mortal character of this affection. Of the remaining six, one died long after treatment, of an affection totally unconnected with the growth, one of septicemia under electric treatment, and four while being operated on with the knife.

Uterine Cancer.

New York Medical Journal says that Winter has recently given the results of his many years' struggle to diminish the frequency of uterine cancer. He believes that three factors are essentially to blame for the prevalence of the disease. The first is the lack of knowledge among practising physicians, which he has combatted by sending thruout his territory brochures dealing with the symptomatology and diagnosis of cancer of the uterus. The second is the conscienceless attitude of midwives, to whom he has addresst a leaflet calling attention to the main features of the disease and urging them to have their patients consult physicians if any suspicious symptoms arise. The third factor is the attitude of women themselves, which he has attempted to overcome by publishing articles in the daily papers, of a popular and not alarming character. The results have been that many more women than formerly have appeared at the clinic for examination and operation, and a greater percentage have consulted specialists.

Fibroids of the Uterus.

McDonald, of Albany, N. Y., in late report of two hundred and eight cases of uterine fibromyomata gives the following conclusions: 1. Fibroids which are producing symptoms, and all fibroids except those designated as small (especially when subserous or intramural), should be removed, because the risk to the patient from operation is far less than that from the tumors themselves. 2. In view of the sarcomatous changes, carcinomatous associations, and complications of uterine fibromyomata, early removal is indicated when they are of sufficient size to produce symptoms. Small uncomplicated tumors not producing symptoms do not require early treatment. 3. Thoro pathological examination should be made of all fibroids for evidence of malignancy. Particular study should be devoted to those tumors which are necrotic, cystic, or both, as among these are found the largest proportion of malignant changes.

Amenorrhea and Eye-Troubles.

Medical Bulletin says that Blondel and Sendral have described an instance of grave ocular complications associated with amenorrhea in a mature woman, and relieved by emmenagogic treatment. The patient was 34 years old. The periods began at 12 and remained regular until the illness under treatment began. At 26 she miscarried and the curet was used; at 29 she lost her husband; then the periods became irregular, and at the end of a year ceast altogether. At the same time the left eye became painful and vision gradually deteriorated. At the age of 32 the patient underwent sympatheticectomy; the pain was relieved, but the sight was lost, and then iridectomy was performed as painful symptoms recurred. The eyeball, however, became the seat of intense pain radiating to the circumorbital region. Blondel and Sendral examined the pelvis and detected markt senile degeneration in the genital tract. The uterine cavity increast only 1½ inches in length. The patient was very neurotic and excitable. The left eyeball was very hard, with operative coloboma and cataract. A large vascular ulcer occupied the inner half of the right cornea; the eyeball was hard and photophobia extreme. Emmenagogic treatment was prescribed, consisting of ovarian capsules, apiol and cachets of aloes and potassio-tartrate of iron. Within a week the pains in the left eye diminisht, and the ulcer of the right cornea began to heal. At the end of a month the period reappeared, the left eye had become painless, and the ulcer had healed. After three months' emmenagogic treatment the sight of the right eye was restored, tho a little affected by the cicatrix of the corneal ulcer. The useless left eyeball was removed. When the above report was publisht some seven months after the emmenagogues were first taken, the patient was very well, the periods continued, altho scanty and not strictly regular, and the sight of the right eye good. The drugs had been discontinued after about three months of treatment.

Fatality of Fibroid Tumors.

That fibroid tumors of the uterus are not so innocuous as many have claimed is the deduction of Dr. C. P. Noble, of Philadelphia. In a recent article he asserts that the evidence which is now available proves conclusively that over one-third of the women having fibroid tumors will die unless the tumors are removed; that the risk of radical operation in uncomplicated cases is very small—probably 1 or 2 per cent; that in the average of cases, in good hands, it is about 5 per cent, rising to 10, 20 or 30 per cent in the gravely complicated cases. Hence on the main proposition that fibroid tumors should be removed there is no question. The only debatable ground is whether or not to remove small fibroid tumors, especially when subserous or intramural.

Pelvic Diseases in Young Girls.

F. F. Lawrence presents the folowing conclusions in Gaylord's Medical Journal: 1. All cases, whether in young girls or in older women, in which menstrual pain, intermenstrual or premenstrual pain is a prominent symptom should be subjected to careful and thoro examination to determine its cause. 2. No leucorrhea should be permitted to pass unnoticed or treated by such "slipshod" method as ordering a douche, giving medicine, etc., without first ascertaining its cause. In all cases in which

discharge is purulent a microscopical examination should be made to determine presence or absence of gonococci, tubercle bacilli, or other important septic organisms. 3. All cases of excessive flowing, intermenstrual hemorrhage, or prolonged menstruation should be thoroly examined. 4. In all cases in which amenorrhea exists every effort should be made to find the cause. 5. In young girls subject to neurotic troubles which develop at puberty or occur with each menstrual epoch, a careful and thoro examination of the pelvis will often reveal the cause. 6. If menstrual pain, irregularity, leucorrhea and neurotic disturbances follow the exanthemata, a pelvic examination is imperatively demanded. 7. In all virgins the rectobimanual examination should be used—the vaginal touch only being used when absolutely necessary.

For Dysmenorrhea.

New England Medical Monthly advises the following combination in painful menstruation in which there is more or less inflammation present:

Berberina phosphit..... 1
Tincture hydrastis..... 8
Simple syrup 64
M. Sig. One teaspoonful every three or four hours.

SURGICAL NOTES.

Stab-Wound of Thoracic Duct.

A stab-wound of the thoracic duct is reported by Dr. W. H. Lyne (Virginia Medical Semi-Monthly, August 26). The patient was a man, 24 years old, who had received a stab-wound one inch deep above and behind the clavicle, parallel with the outer border of the sternomastoid muscle. There had been considerable hemorrhage and an abundant escape of milky fluid from the wound. The wound was cleansed and packt with iodoform gauze and about seven hours later the oozing and escape of chyle had ceast. The patient was allowed a light diet. There was slight suppuration, but recovery was prompt and complete.

A Case of Ainhum.

A case of ainhum is reported to Louisville Journal of Medicine and Surgery by Dr. Bernard Wolff, Lecturer on Dermatology in the Atlantic College of Physicians and Surgeons. The patient was a colored woman of 40, in whom the trouble had existed on one foot for more than twenty years; for its appearance on the other she consulted Dr. Wolff. The constriction at the base of the little toe gradually narrowed until the toe became attacht to the foot only by a slender, flexible pedicle. There was a deep ulcer or fissure at the proximal margin of the constriction. The process of spontaneous separation was cut short by a snip of the scissors. The toe, when removed, was a globular mass about the size of a "volunteer" tomato. There was a vestige of nail. On section, the mass was seen to contain no osseous structure, the whole being composed of fibrous and fatty tissue.

Surgical Aspects of Peritonitis.

Louisville Journal of Surgery and Medicine contains an abstract of a paper by Dr. August Schachner, Professor of Surgery in Louisville Medical College, on peritonitis from a surgical standpoint. He classifies according to causation and pathology; the former as primary, secondary and specific; the latter toxic, the patient dying in forty-eight hours in shock; hemorrhagic, with great virulence also; fibro-purulent, a slower process and purulent, there being much pus present and flocculent matter; cause of death is interference of the ebb and flow of serum in the peritoneum; currents move toward diaphragm. The absorbing capacity of the peritoneum is great. Prophylaxis is the first element in treatment, both before and during operation; post-operative peritonitis being the most virulent we can have. The best guides as to progress are distension and alteration in the face, as well as pulse; face shows anxiety, not pain. Exclude infection, preserve the integrity of the peritoneum during the operation and afterward. When peritonitis is already developt, operate before the patient is in extremis. Any percentage of recoveries, no matter how 'ow, is a credit to surgery. It is not "what is to be done," but "how?" Some favor large incision, evisceration and washing; others, washing without evisceration; others remove the deposit of fibrin covering the intestine, some say it opens new avenues of infection; others advise mopping the intestines. A good method is injection of sulphate of magnesia into the cavity; many anchor knuckles of badly inflamed gut to abdominal incision as also of value. The chief things is thoro washing and perfect drainage.

Cystitis and Pyelitis.

For the differential diagnosis between cystitis and pyelitis, some genito-urinary surgeons would have us believe ureteral catheterization to be indispensible. New York Medical Times, however, gives the Rosenfeld method of differentiation credit for being equally reliable. Diagnosis is confirmed by three methods: 1. By the reaction of the urine; in uncomplicated pyelitis it is acid; in cystitis it is alkaline in all but tubercular cases. 2. On the shape of the white and the red blood cells, the former are round if from the bladder, but distorted if from the pelvis of the kidney. The same condition is evidenced by the red cells. They are also colorless if from the kidney; the epithelia of the kidney are round and have a glistening nucleus. 3. The relation between the amount of albumin and the amount of pus is an important diagnostic point. In cystitis, altho the quantity of pus be great the albumin percentage is low, while in pyelitis the conditions are reverst.

Treatment of Enlarged Prostate.

In an elaborate article on the "evolution, present status and choice of operative method for the cure of hypertrophied prostate," in the June number of Annals of Surgery, Watson says that no hard and fast rules can be laid down, but that the method best suited to the individual case must be selected. The most important single factor is the condition of the renal function and the change for better or worse if operative treatment is not applied. While radical treatment is not to be advised in all cases where slight symptoms are manifest, it must be remembered that if the patient's condition is not unfavorable to an operation of this magnitude the mortality will be trifling, and the risks not nearly so great as those entailed by the use of catheter, assuming the latter to have been employed instead and under the same conditions. Where there is nothing to prevent a free choice of method, he advises the total removal of the gland by the best of the perineal technic. When the perineal route is contraindicated the suprapubic method is the operation of choice. The Bottini operation is the last of the fixt operations, except palliative drainage in late cases.

Hand Sterilization.

Dr. H. J. Whitacre, of Cincinnati, approvingly quotes Collins (Lancet-Clinic), who has made an extensive bacteriological study into the sterilization of hands, and arrives at the following conclusions: 1. The nail-brush should be boiled before using, or, better still, kept always in an antiseptic solution. 2. Vigorous scrubbing is required for at least five minutes. 3. The water should be as hot as can be comfortably borne. 4. Chemical antiseptics of considerable strength should be used for cleansing the skin, and it is preferable that they should be used in the primary washing as well as in the final soaking. 5. With sufficient time and care, sterilization of the skin is not impossible. The mode of preparing the skin of the patient for operation will be similar to that found best for sterilizing the hands of the surgeon, tho probably less friction will be required in cleansing the skin of other parts of the body than is required in cleansing the hands.

Anesthetic for Throat Work.

Nyle advises when opening peritonsillar abscesses, the use of equal parts of carbolic acid, menthol and cocaine, to which a few drops of alcohol are added will produce local anesthesia along the line of intended incision.

To Abort a Felon.

It is claimed by Dr. J. Rilus Eastman, Professor of Surgery in Central College of Physicians and Surgeons, of Indianapolis, that a commencing felon will always be aborted by the local application of alcohol under perfect air exclusion. Cotton is saturated with alcohol and placed about the affected part and a thin rubber finger-stall applied over all. Seventy-two hours usually suffice to give relief or even effect a cure. He learned this in Von Bergmann's polyclinic in 1897, since which time he has not had occasion to lance a single felon, the treatment of which was begun in time by this method.

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It is the rational treatment in Gastric and Intestinal Disorders, such as Dyspepsia, Gastritis, Gastric Ulcer and all Contagious and Inflammatory Diseases of the Stomach and Intestines.

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NOTE—Cheap and imitation baking powders are recommended and their sale pushed by certain grocers because of the greater profit in them. These imitation powders almost invariably are made of alum. Alum costs but two cents a pound, while cream of tartar costs over thirty cents. Alum is employed simply because it is cheap, but every physician knows that the use of this corrosive poison in food is at the cost of health. Think of nursing mothers, delicate girls and sickly children being fed on food made with alum!

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Indicated in Pulmonary Tuberculosis, Acute and Chronic Bronchitis, Emphysema, Asthma, Pleurisy, and all Affections of the Respiratory Tract.

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Guaiacol Carbonate
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Dose: One tablet after each meal of the full strength tablets. The half strength tablets may be given every two or three hours.

Price per 100	- -	$ .80
Price per 500	- -	3.80
Price per 1000	- -	7.50

Clinical tests have proven that this tablet will check the activity of the tubercle, stop the cough and fever, promote nutrition and assimilation, increase the red corpuscles and hasten absorption and elimination of morbid products.

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INCOMPLETE ABSORPTION, caused by *precipitation and the presence of alkaline salts and acids,* has heretofore prevented the realization of the full therapeutic action of iodine.

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Journal of American Surgery and Gynecology

—EDITED BY—

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NOTES AND ITEMS.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The fourteenth annual meeting of the American Electro-Therapeutic Association will be held at the Inside Inn, St. Louis, Mo., September 13, 14, 15 and 16, 1904. The preliminary program to date, subject to amplification and revision, appears below:

Some Observations on the Medical Uses of the Constant Current. Daniel Roberts Brower, Chicago, Ill.

The Therapeutic Application of the Continuous Current. Truman Abel Pease, Norwood, N. Y.

Exhibition of a New Current Controller and Discussion of the Methods of Therapeutic Control of Street Main Currents. George Betton Massey, Philadelphia, Pa.

The Cataphoric Treatment of Cancer. Amede Granger, New Orleans, La.

Clinical Reports of Some Interesting Cases Treated by Electricity. Samuel Fairweather Wilson, Montreal, Canada.

Clinical and Experimental Effects of Electrical Currents of High Potential and Frequency. John Holcomb Burch, Baldwinsville, N. Y.

Therapeutic Action of High Frequency Current. Walter Henry White, Boston, Mass.

Electro-Therapy of the Psychic and Sympathetic Neuron Centres. Charles H. Hughes, St. Louis, Mo.

The Physiotherapy of Neurasthenia. T. Riviere, Paris, France.

The Value of the Roentgen Ray in the Diagnosis of Fractures. Mihran Krikor Kassabian, Philadelphia, Pa.

Diagnosis of Calculi. Russell Herbert Boggs, Pittsburg, Pa.

Further Researches in the Treatment of Tuberculosis. Jefferson Demetrius Gibson, Denver, Colo.

A Case of Hyperidrosis of the Axillae Cured by the X-Ray. George H. Stover, Denver, Colo.

Violet Light Baths; Their Physiological and Therapeutic Effects. Ernest Albert-Weil, Paris, France.

The Use of the Ultra-Violet Light in Therapeutics. Albert Eugene Stern, Indianapolis, Ind.

Locomotor Ataxia Successfully Treated and Ultra-Violet Rays. Joseph Monroe Liebermann, New York, N. Y.

Some Aspects of Phototherapy. Charles Rea Dickson, Toronto, Canada.

Photo-Therapy in Chronic Diseases. John Harvey Kellogg, Battle Creek, Mich.

The Importance of Associating Other Physical Measures with Electricity in Therapeutics. William Benham Snow, New York.

A SCOTCH DOCTOR'S OPINION.

The Quarterly Journal of Inebriety, so well and favorably known thru the instrumentality of its brilliant and philanthropic editor, T. D. Crothers, A. M., M. D., quotes the following statement in reference to pain-relieving remedies, from one of Great Britain's noted medical men, Dr. John Stewart Norvell, resident surgeon, Royal Infirmary, Edinburg: "Antikamnia Tablets are a remedy for almost every kind of pain, particularly for headaches, neuralgias and neuroses due to irregularities of menstruation. They act with wonderful promptness; the dosage is small, two tablets. The undesirable after-effects so commonly attending the use of other coal-tar analgesics are entirely absent and they can therefore be safely put into the hands of patients for use without the personal supervision of the physician."

"HOW DOES IT SEEM TO YOU?"

It seems to me I'd like to go
Where bells don't ring, nor whistles blow,
Nor clocks don't strike, nor gongs don't sound,
And I'd have stillness all around.

Not real stillness, but just the trees'
Low whisperings, or the hum of bees,
Or brooks' faint babbling over stones
In strangely, softly tangled tones.

Or maybe a cricket or katydid,
Or the songs of birds in hedges hid,
Or just some such sweet sounds as these
To fill a tired heart with ease.

If 'twern't for sight and sound and smell,
I'd like a city pretty well,
But when it comes to getting rest
I like the country lots the best.

Sometimes it seems to me I must
Just quit the city's din and dust
And get out where the sky it blue;
And say, how does it seem to you?

—Eugene Field.

CACTINA IN FUNCTIONAL DISEASES OF THE HEART.

By John L. Hatch, B. S., M. D., New York.

The last in the list of cardiac stimulants, but by no means the least, is cactina. This drug is the proximate principle of the cereus grandiflora (night blooming cereus), and belongs to the natural order of the cactaceae, a plant indigenous to tropical America. This active principle was most successfully isolated by a pharmaceutical chemist of St. Louis—Frederick W. Sultan—who obtained it from the flowers and stems of the Mexican variety, which yields a greater and more constant quantity than any other species. This drug is non-irritant and can be applied to the conjuctiva in a ten per cent solution without producing any noticeable effect. Therapeutic doses cause a rise in the arterial pressure and increase the pulse-rate, whereas toxic doses cause first, acceleration of the pulse and a rise in arterial pressure that is followed by a drop in the pressure and a diminution in the rate of the pulse. The pulsations become irregular and spasmodic and the heart is finally arrested in systole.

A fair conclusion is, that the drug produces these effects chiefly by direct stimulation of the intra-cardiac ganglion.

From this we may summarize that the action of the cactina in therapeutic doses is to increase the musculo-motor energy of the heart, elevate the arterial tension with a corresponding increase in the height and force of the pulse wave, and to elevate the genral nervous tone by stimulating the motor centers in the cord.

Cactina is indicated then whenever we need a powerful cardiac tonic stimulant.

Its greatest value has been shown in functional dicturbances of the heart, such a simple dilatation and cardio musculo-atony, in which there are no organic lesions.

It has a great advantage over digitalis in that it can be administered continuously without producing gastric irritation and without fear from cumulative action.

It is of use also in organic diseases of the heart, save in one instance, viz.: mitral stenosis, where digitalis is to be preferred because it prolongs the diastolic period, thus giving the ventricle time and power to empty itself.

The dose of cactina with which the best results have been obtained is 1-100 of a grain (in the form of Cactina pillets) repeated at frequent intervals. The continued use reduces and regulates the pulse by giving strength and tone to the heart's action.

In several cases of functional disturbances of the heart, particularly tobacco heart, in which I have prescribed cactina, I have been able to reduce the pulse rate within a few hours, and by the withdrawal of the narcotic and continued use of the drug bring the patient to a normal condition.

My experience with cactina has been such that I put more faith in it for functional disturbances than any other remedy that I have tried.

SOME OBSTINATE BLADDER CASES.

Dr. George W. Hopkins, Cleveland, O.

John C., aet. 31. Occupation, patrolman. Following exposure, patient experienced bladder symptoms as follows: Frequent urination, tenesmus, hypogastric pain and a temperature of 101.4°. The urine was scanty, turbid and loaded with mucus. Diagnosis: Acute cystitis. Treatment consisted of rest in bed, restricted diet, anodynes for tenesmus, diluent and alkaline drinks. The acute symptoms promptly subsided, but the urine continued abnormal despite the general measures employed and the internal administration of urinary antiseptics. Irrigation with boric acid solutions of varying strength proved unsatisfactory, as did also solutions of potassium permanganate and silver nitrate similarly applied. A 20 per cent solution of Glyco-Thymoline was then substituted for irrigation, and the improvement was markt and continuous until recovery was perfect.

Harry R., aet. 43. Occupation, bookkeeper. Had a history of bladder trouble for several years' duration. His urine was blood-tinged and loaded with mucus. Microscopic examination revealed an abundance of ammonia-magnesium phosphates, numerous disintegrating pus corpuscles, blood-corpuscles and blood-shadows. Repeated examinations with the sound gave negative results, but a skiagraph taken with a high vacuum hard tube revealed a small calculus which had persistently evaded the sound in previous examination. Lithotomy was performed and the calculus removed but the urine failed to return to normal. Irrigation in turn with boric acid, potassium permanganate and silver nitrate solutions proved unsatisfactory. Glyco-Thymoline irrigations proved satisfactory from the start and recovery was ultimately perfect.

William L., aet. 55 Occupation, saloonkeeper. Had a history of repeated attacks of gonorrhea which were never appropriately treated. Urine was voided with great difficulty at frequent intervals and loaded with mucus. Reaction was alkaline and the microscope revealed an abundance of amorphous phosphates of calcium and magnesium, flat epithelial cells, disintegrating pus-corpuscles and indiga crystals. Examination confirmed diagnosis of chronic cystitis due to urethral stricture and hypertrophied prostate. Catelectrolysis by the slow method removed the stricture and Bottini's operation relieved the enlarged prostate, but the urine failed to clear up as desired. The cystoscope showed markt changes in the bladder walls, but catheterization of the urethers yielded negative results. Appropriate urinary antiseptics were administered internally and creolin and silver nitrate solutions by vesical irrigation with only slight improvement. Irrigations with 20 per cent solutions of Glyco-Thymoline gave early and continuous improvement until recovery was perfect.

A VALUABLE DOUCHE.

The Physicians' Standard Supply Co., Odd Fellows' Temple, Philadelphia, wish the publishers to call the attention of the physicians to The Perfection Douche advertised in this issue. Our readers should send for the booklet describing this invention. It certainly is far ahead of the ordinary syringe, and is recommended as being thoroly hygienic and effective. Write now and mention this journal. The manufacturers make this statement:

"With Perfection Douche, which combines comfort, safety and effectiveness, every atom of foreign matter is removed. The hard rubber device fits perfectly in the vaginal opening, and the irrigator is adjustable, so that the spray will reach the extreme upper end of the vagina, and the deep folds (ruga) are so thoroly expanded that the whole interior surface is subjected to the action of the cleanser. The out-flow tube obviates the necessity of disrobing, and the douche may be used in a reclining position. The Perfection Douche is composed of a main part or body, supplied with an adjustable syringe tube running thru it and capable of being set to any desired length, thus permitting its use by either matron or maid. There are two tubes, thru one of which the liquid enters and thru the other it escapes. The cone end of the body of the douche is inserted into the mouth of the vaginal cavity, entirely filling it, thus preventing the escape of any of the fluid around the edges."

A REMARKABLE MINE.

Indeed, the surface showing on the claims (Atlas) is one of the most remarkable in this whole camp. To be sure, the richest lead in this group is comparatively small for this section, but it lies between well-defined contact walls and is widening out as it goes down and the lead cuts the formation at nearly right angles, showing it to be a true fissure. Furthermore, for a distance of over 250 feet the lead is opened up by seven or eight cross-cuts, from which every average sample thus far not only assayed $100, but up into the hundreds. It is proper to conclude that this group of claims is very liable to return from $10 to $20 gold profit and even more, for every single dollar spent on the property for development purposes.—(From an open letter of Dr. D. B. Strong to the Lewiston Tribune.)

GLYCOGEN, A THERAPEUTIC AID.

By Jacques de Nittis.

(Translated from the Tribune Medicale, April 2, 1904.)

In the Presse Medicale of the 22nd of April, 1903, a year after my first communication to the Societe de Biologie, I referred to the therapeutic effects resulting from the administration of glycogen.

Since then glycogen has attracted much attention in France and abroad. The results are often surprising in those cachexias and acute affections where the organisms react badly.

Now that glycogen is beginning to be adopted in general practice, it appears to me interesting to give more precise indications for its useful employment.

The clinical applications of this agent suggested themselves by the trend of modern medical thought and the physiologic indications acquired by research alone in recent years. According to the investigations of de Luschi, de Brault, de Loeper, Esmonet, de Teissier, de Charrin and others which accord with my own, glycogen accumulates at points where either a reaction takes place, or where there is cellular proliferation; it is diminisht or eliminated from the blood of patients suffering from tubercular, typhoid, diphtheritic and general cachexia; besides which, it is antitoxic and bactericidal.

The theoretical grounds on which glycogen produces results, however, required the support of actual clinical evidence before it could be seriously accepted by the medical profession generally, and this has been most abundantly forthcoming.

From the standpoint of scientific deduction, it is perhaps fortunate that it has also been used as an empirical remedy, for who would have supposed it possible that glycogen could produce such marvelous effects in migraine? The general indications in which its effects are demonstrated and supported on purely technical grounds are well establisht, in cachectic conditions, such as occur in tuberculosis, cancer, neurasthenia, diabetes, albuminuria, chlorosis, etc.

The vitality of patients improves rapidly, and those who have been in bed for months are usually able to get up after ten or twenty days' treatment. The morale improves, the appetite increases, and some tubercular patients gain as much as two pounds weekly under its influence.

In typical infectious diseases, such as typhoid, grippe, scarlatina, pneumonia, erysipelas, etc., the course of the disease is simplified, temperature is easily reduced and convalescence is much easier, and more rapid.

These effects are observed in the most serious cases, such as we find in tubercular peritonitis. I recall a case of this nature, now completely cured, which was treated in the surgical department of the Lariboisiere Hospital with glycogen, the patient regaining strength and appetite in a most remarkable manner after a few days' treatment.

In the aged, glycogen may be lookt upon as a universal remedy in all affections; it is of especial advantage with this class of patients, whose organs have become fragile, because there is absolutely no danger of doing harm. In one case of pneumonia in an old man, the patient recovered with the ease that one expects only amongst the young, and in two asthma cardiac cases, aged respectively 72 and 76 years, one was able to go out after being confined in his room for months, after a few days' administration of glycogen, and the other lose the trembling which had hitherto prevented his drinking from a spoon. The method of administering glycogen is of great importance, and if failures to confirm my claims have occurred amongst my confreres I can only attribute it to faulty methods of administering the glycogen.

1. Glycogen acts better taken by the mouth than when injected hypodermically, but the hypodermic injections are necessary in pyrexia, or where there is danger of collapse and heart depression.

2. As the ferments of the saliva and of the intestines change the glycogen into an inactive maltose, and those of the stomach do not materially affect it, it is necessary to give glycogen in a form which will dissolve rapidly in the stomach, but without coming in contact with the buccal secretions. Hence

capsules which open rapidly in the presence of aqueous fluids are most convenient.

3. Glycogen should be administered well between meals, and it is perhaps better to give it say one hour before the midday meal.

From eight to twelve centigrammes give the best results in chronic diseases, and from twelve to twenty centigrammes in acute affections.

Briefly, glycogen medication is indicated in all cachectic conditions, as well as in infectious diseases, of which it simplifies the evolution and convalesence. Glycogen has no contra-indications, and is not in any way toxic. It has certain markt accessory qualities, namely, tonic action of the heart, besides being distinctly bactericidal and anti-toxic. It is therefore indicated in the treatment of all auto-intoxications, such as migraine, and wherever there are wounds and ulcers which do not heal. Glycogen, in fact, while having no specific action in itself, is a therapeutic aid, stimulating the natural resistance of the organism against the invasion of pathogenic organisms, and 's therefore fully worthy of the consideration of modern physicians

CHOREA AND ANEMIA.

By Roshier W. Miller, M. D., Ph. G., Barton Heights, Va.

Lecturer on Nervous and Mental Diseases, and Professor of Theory and Practice of Pharmacy, University College of Medicine, Richmond, Virginia.

In the etiology of chorea, as given in the text-books, nothing is noted relative to anemia. It is simply accounted as an accompanying symptom of the condition. Medical literature emphasizes the relation between rheumatism and chorea, with anemia as an important symptom. After observation of several cases, I am strongly of opinion, however, that anemia as a causative factor is worthy of investigation.

Anemia of toxic origin presents pathological conditions which favor the production of choreic affections. It is true that simple anemia is, as a rule, of secondary origin, and, viewed in this light, it may be argued that if chorea arises, it is the result of the primary and not of the secondary conditions—thus agreeing with the admitted etiology. This argument, however, will not satisfactorily explain those cases of chorea which arise remotely from the primary condition, but recently from the secondary effects.

I submit three cases in which symptoms, treatment and recovery seem to intimate at least a possible relation between anemia and chorea.

Case I.—A female child of eight years gave a history of typhoid fever eight months prior to my visit. According to the mother's statement, the child had made a quick and good recovery, gaining rapidly in weight and exhibiting the energy of her former life. Six months later she became irritable and pale, with pain in her arms and legs, which condition and irregular spasms of the muscles of the face. Simple anemia was in evidence from objective and subjective symptoms alone, but was unquestioned in the light of the results obtained from blood examination—the red blood element being present to the extent of barely 3,000,000 red corpuscles per c. m. This case was treated with two teaspoonfuls of Pepto-Mangan (Gude) and two drops of Fowler's solution, three times a day. After gastric symptoms had abated somewhat, two raw eggs per day were added to the diet. The patient was discharged in five weeks, completely recovered.

Case II.—A female child of ten years of age; gave history of malaria (a well-defined case of intermittent fever) one year previously. The pallid condition of the child induced the mother to solicit my aid. Upon examination, I found slight choreic movements which had escaped the mother's eye, tho she did admit that the child "could not sit still very long at a time," and "was constantly working her fingers." The blood examination revealed no plasmodium. The red cells were reduced to 2,800,000 per c. m., with a proportionate decrease of hemoglobin. Pepto-Mangan (Gude) alone was employed in doses of two drams in a glass of milk three times a day. The blood examination four weeks later showed red cells present to the amount of 3,900,000 per c. m., at which time I dismisst the case completely recovered.

Case III.—A female child of thirteen years. Two months before my visit, the mother informed me the child became peevish and pale, and was reproved at school for her inability to write neatly. She was taken from school, but she grew rapidly worse. Morning nausea, vomiting, headache, and anorexia were her daily companions. I found her with pronounced hysterical spasm, with involvement of the upper and lower extremities. Hemic murmurs were plainly apparent, but no endocardial irritation could be determined. The blood count showed reduction in red cells to 2,100,000 per c. m. The hemoglobin was reduced to a degree greater than the red cells. A curious feature of the case was the morning nausea. Immediately upon awakening, she experienced nausea, which was followed by vomiting. I discovered, however, that this condition was superinduced by odors from the kitchen, and directed that a small sponge, moistened with creosote water be applied over the nose and mouth before the preparation for breakfast began. The annoying symptom was promptly checkt by this simple method. The anemia in this case may have been produced by malnutrition, but even this view is mere speculation.

The irritability of the stomach in this case was so pronounced that I did not deem it wise to give nourishment—not to speak of medicine—by the stomach. During the first four days rectal alimentation was employed. A nutritive enema, consisting of four ounces of peptonized milk and two drams of Pepto-Mangan (Gude), was given every six hours. Small amounts of peptonoids with creosote on ice were given by the stomach. Egg albumin was taken in all the water she drank. After four days, the stomach was tested with small amounts of milk and Pepto-Mangan (Gude). Beginning with four ounces of milk and one dram of Pepto-Mangan (Gude) every four hours, the amounts of each were rapidly increast until after three days the patient was taking eight ounces of Pepto-Mangan (Gude) three times a day. This diet, plus three raw eggs a day, together with the above treatment, was all that was employed for six weeks. The blood examination at this time showed a highly gratifying condition—the red cells being present to the extent of 4,100,000 per c. m. The bloom of youth once more tinted the cheek and the shrine of St. Vitas lost a visitor.

A CONTRIBUTION TO THE KNOWLEDGE OF ADRENALIN.

By H. Pauly, of the Laboratory of the University of Bonn.

In a continuation of his former paper on Adrenalin, Prof. Pauly takes emphatic exception to the empirical formula, C10 H13 6O3 ½H2O, proposed by Prof. Abel (Berichte, Vol. 36, p. 368), supporting rather the formula, C9H13NO3, first proposed by Aldrich (The American Journal of Physiology, Vol. 5, 457).

In a former paper Abel was very curt (Berichte, Vol. 37, p. 368) with Pauly's analytical results, informnig the readers that it is not sufficient to obtain an ash-free preparation, it must also be free from organic phosphorus; furthermore, one must avoid the possible retention of ammonia, which was not impossible with Pauly. In order to overcome Abel's objections, Pauly prepared an Adrenalin entirely free from organic as well as inorganic phosphorus, and found that the nitrogen content remained the same as i his four or five previous analyses. Experiments were also carried out which showed that the Adrenalin employed for the analyses was entirely free from adherent ammonia, while the contention of Abel that Adrenalin obtained by precipitation with dilute ammonia contains adherent ammonia that is difficult to wash out is also shown to be erroneous. It is also shown conclusively by drying Adrenaline at different temperatures that it contains no water of crystallization according to the formula C10 H13 NO3 ½H2O (Abel). That Adrenalin contains no water of crystallization was shown also by Abel's own experimental work when he heated the same to 145°-160° in vacuo without appreciable loss; but nevertheless this observation, evident as it is, did not suggest to him the only possible conclusion that Adrenalin contains no water of crystallization. (The formula C10 H13 ..O3 ½H2O requires 441% H2O).

What has been stated in this article together with the excellent agreement of Pauly's former analytical results suffice to show his earlier statements require in no wise a correction, and that the formula C10 H13 NO3 ½H2O proposed by Abel is incorrect. This formula, together with the name "Epinephrin Hydrate" which designates the same, should be blotted out of the literature. The name "Epinephrin," however, should remain now as before for the basic substance obtained by treating Adrenalin with concentrated H2SO4, or with dilute acids under pressure, and to this the formula C10H13NO3 should be given. This body, whose chemical composition is different from that of Adrenalin, and whose physical, chemical and pharmacological properties are different from the real blood-pressure-raising substance, should be considered a transformation product of the active principle.

With respect to names, Abel does not distinguish sharply between the designations "Epinephrin" and "Epinephrin Hydrate,' altho he has stated previously (Berichte, Vol. 36, p. 1846), that a body is produced from "Epinephrin Hydrate" (equivalent to Adrenalin) with alkaloidal properties (which Adrenalin does

not show!), "Epinephrin." He uses in the title of his article, however, the name "Epinephrin" exclusively. This must awake the conviction in the mind of the unsophisticated reader that the active substance of the suprarenal bears the name "Epinephrin," while it is really the name of the transformation product.

The consequence of this indefinite manner of designation has, in the meantime, influenced Jowett (Proceedings Chem. Soc., 20, 18) to write: "Epinephrin was the name given by Abel and Crawford to the active principle of the suprarenal gland." This was, of course, true, until the time Abel gave this name "Epinephrin" especially to the transformation product. Jowett says later: "As Abel and Crawford were the first to isolate the active principle, altho in an impure condition,—" In the interest of recorded truth Pauly objects to this. Abel has, it is true, from crude extracts of Adrenalin, thrown out, by benzoylating, an impure benzoyl product which still contained, no doubt, the original molecule; altho he could not obtain from the same, by decomposition, my Adrenalin, but obtained, instead of the same, quite another thing than the principle. Von Fuerth was more fortunate. He precipitated the active substance in the form of an iron compound, from which he could liberate crystalline Adrenalin after Takamine (in 1901) had given the method for the direct precipitation of the substance with ammonia. Thus there can be no doubt that not Abel and Crawford, but Takamine first obtained the active substance. If Abel adheres to the statement referred to in the beginning that his formula C10 H13 NO3 ½ H2O finds confirmation in the analyses of salts and derivatives, it must be answered that that is not the case, that he, outside of one impure benzoyl product, has not prepared, not to say analyzed, up to the present time, either a solt or a derivative of Adrenalin, in which the nucleus of the last is still intact. Without doubt he means the transformation products of epinephrin described by him; but according to the experiments carried out above, the same are not conclusive.

Two derivatives of Adrenalin—Adrenalin urate, C9 H13 NO3 C5 H4 N4 O3, and dibenzoyl Adrenalin, C9 H11 NO3 (C6 H5 CO)2—were prepared and analyzed, both of which appear to confirm the formula C9 H13 NO3. The difficulty of obtaining either derivative in a crystalline form accounts no doubt for the slight deviation from the theoretical values. It is also not improbable that the benzoyl compound may be a mixture of mono- and tri-benzoyl Adrenalin.

WORMS IN HOGS.

Dr. J. J. Conner, one of the most prominent surgeons of Central Illinois, has sent the following letter—which perhaps some reader of the Journal can answer:

Dear Doctor: I wish to inquire whether or not the hog is infected with the parasite uncinaria duodenalis? I will be very much obliged to you if you will give me any information bearing on the subject, either of a personal character or in pointing out to me where I may find any literature pertaining to the subejct.

In Vol. 2, Series XIV., 1904, of the International Clinics, Prof. Allen J. Smith of Philadelphia has an interesting article on "Uncinariasis," in which he says: "In addition to the two hook-worms of man, a number of species infesting the lower animals, as uncinaria canina of dogs, uncinaria stenocephala of dogs, uncinaria trigonocephala of sheep, uncinaria radiata of cattle and uncinaria lucasi of seals. All are parasites of importance in that they attach themselves to the intestinal mucous membrane, suck blood from the tissues of the host, and give rise to more or less severe anemia of the type of progressive pernicious anemia' when fully developt."

In reading this I was reminded of a circumstance which happened in my practice in 1875. I bought, November 10 of that year, a bunch of young hogs (shoats) of a patron, and the most of them "turned up" and died, with the so-called, at that time, "hog cholera." I held an autopsy on the carcasses of two of them and found the following conditions, which greatly interested me at the time, viz.: The pigs were greatly emaciated, tottered as they walkt, with head down and ears drooping, grunted with evident pain, refused food and drink, mucous membranes pale and anemic. On opening the body I found in the small intestines worms about as long and as large as the common intestinal worm of children, firmly attacht to the gut by their heads, which were entirely buried in the mucous membrane. In catching hold of the worms attacht to the gut I could lift a double loop of the intestines two or three yards long before the worm would become detacht from the bowel, and when it did let loose or when forcibly torn from the gut a hole was left in the bowl about one-eighth of an inch across. No blood, however, escaped from the hole thus made.

The specimen was shown to the secretary of the Illinois State Board of Agriculture, but he was unable to give me any information regarding the matter, but requested me to write a description of what I had found for the reports which the board was preparing at the time, but I did not do it. I did, however, take the specimen back to Ann Arbor with me and placed the same in the hands of Prof. E. S. Dunster, who presented them to the class and based a few remarks on "worms" in general as they are found in the human, and especially in children. He placed the specimen in the University Museum, where I suppose it remains now.

I will be very grateful to you if you will cite me to any information on the subject, my interest being awakened by the above mentioned article of Professor Smith. Thanking you in advance, I remain, Yours truly,

Pana, Ill. J. J. CONNER, M. D.

TREATMENT OF CHRONIC ULCER OF THE LEG OF LONG STANDING.

By Horatio W. A. Cowan, M. B., C. M., Aberdeen.

At the beginning of the present year I was called to a woman aged 54 years who had a chronic sloughing ulcer for twenty-two years, situated on the outside of the left leg, some ten inches long and three inches wide, with indurated edges and some thrombosis of the veins of the inside of the knee. Having first cleansed the ulcer with charcoal poultices for two days, I applied wet butter cloth and then spread Antiphlogistine over it, after which cotton wool and a bandage were put on. This was done every day by the patient's friends for four months. The ulcer is now quite healed over and the induration is all gone. She is able to resume her ordinary housework. I publish this case in the hope that it might be useful to others as Unna's paste and all sorts of methods had been previously tried. I may say that I have no personal interest in Antiphlogistine.

APPROPRIATE.

Great Actor—I propose making a farewell tour of the provinces. What play would you advise?

Critic—"Much Adieu About Nothing."—Detroit Journal.

INTESTINAL PARASITES.

Battle & Co. of St. Louis have just issued the second of the series of twelve illustrations of the intestinal parasites and will send them free to physicians on application.

POOR LITTLE WILLIE.

A swarm of bees chased Willie
Till the boy was almost wild.
His anxious parents wondered
Why the bees pursued the child.

To diagnose they summoned
Their physician, Dr. Ives.
"I think," he said, "the reason's clear,
Your Willie has the hives."

—Cornell Widow.

OPIUM NEUROSIS.

I am very much pleased with Sanmetto. It is a valuable preparation and should be in the hands of every specialist who treats the opium neurosis. In such conditions there is always considerable urethral inflammation besides other diseases of the genito-urinary organs; but opium users are obliged to take twice the quantity of Sanmetto usually prescribed, to produce good results. F. H. GRIFFIN, M. D.

Germantown, Philadelphia, Pa.

WHERE HE GOT IT.

It was not long ago (Am. Med.) that a coroner's jury reported the following verdict:

"This man died of stone in the kidney, which stone he swallowed when lying on a gravel path in a state of drunkenness."

SILENT WOMEN (MUMMIES).

"Yes," said Henpeck, "the thing that impresst me most in Egypt was the mummy of one of the ancient queens."

"What was remarkable about it?"

"The fact that they could make her dry up and stay that way."